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A Scrapbook of Articles  
Primarily Pertaining to  
Southern California  
Mining Activity

Assembled by  
Alan Hensher

# GREAT CHANGES ON THE DESERT

Railroads Racing to be First to Reach the New Mining Camps. Map Showing Roads.

BY G. E. BAILEY, E. M., LOS ANGELES, CALIFORNIA.

**H**ISTORY is being made rapidly as we witness the greatest changes upon the desert. This year changes of all. It is unusual to see three trunk lines racing for a mining camp only one year old. What this means to Los Angeles and Southern California cannot now be estimated, but all who are familiar with the discoveries that have been made in western Nevada, within the last few years, realize that the mining industry is going to go forward with leaps and bounds, and that railroad connections mean that mining supplies will be purchased in Southern California and refractory ores reduced here.

**Santa Fe Line.**—Santa Fe engineers have surveyed the road leaving the main line at Ludlow and running north up the Amargosa River. This road is commonly known as the "Borax Road." It passes along the west edge of the Old Dad Mountains to Soda Lake,—the sink of the Mohave river where it crosses the Salt Lake route near the stone quarries. Its terminus is thence north along the east side of the Soda Lake Mountains crossing Soda Lake to the east end of the Avawatz Mountains, passing between this range to the Shadow Mountains, thence it runs to the Salt Springs near the old Amargosa Mine, and at that point enters the eastern end of South Death Valley. From this point the road follows the Amargosa River all the way to the Bullfrog Mining District. Just before reaching the Nevada line a branch has been surveyed west to the Lila Borax mines, at the head of Furnace Creek. This road has no mountain ranges to cross and no difficult grounds excepting through the short canyon of the Amargosa River, near the Funeral and Kingston Mountains.

The distance from Ludlow to Bullfrog is 158 miles. Grading was started nearly three months ago.

**Salt Lake Route.**—The San Pedro, Los Angeles and Salt Lake Railroad, building a branch, starting from its main line at Las Vegas, Nevada, and following, approximately, the present stage road to Bullfrog. It goes north to Tule Springs, and Corn Creek to Indian Spring, thence west to Miller's Well, thence northwest across the Amargosa Desert to the Bullfrog district. This line is about 100 miles long.

**Goldfield Road.**—The railroads running from Hazen, south to Goldfield way of Tonopah, have belonged until recently to two corporations. These have been merged and the road will be extended south at once to Bullfrog, following along the line of the automobile stage road. The distance from Goldfield to Bullfrog is about seventy-five miles.

**The Santa Fe Cutoff.**—The Santa Fe road has been vigorously pushing

their cutoff line through Arizona. This line crosses the Colorado River at Parker, thence it runs west to the south end of the Turtle Mountains in California, and thence northwest past Danby Lake, to the south end of the Old Woman's Mountains, and thence to Bengal on the main line. (See map on preceding page.)

Over this route there are no mountain ranges to cross the whole line to the river, it lies on the desert floor with grades of about two per cent. This line avoids all the heavy grades by way of Goff and Needles.

It has been asked by some why the Santa Fe did not build to Bullfrog from Ivanpah, as they already have a branch 100 miles in length running from Goff to Manvel and Ivanpah. The examination of this cutoff route through Arizona, shows that it connects with the main line only a short distance east of Ludlow and the road from Ludlow running almost due north to Bullfrog will have the rich districts on both sides tributary to it without competition. If the branch were built north from Ivanpah, they would not only have to cross three ranges, but would have to divide resources of the country passed through with the Salt Lake Route.

**Resources Developed.**—The following resources will be developed along the Santa Fe Route from Ludlow. Near the caves on the Mohave River, are large deposits of iron ore. Soda Lake has section after section covered with heavy deposits of sulphate and carbonate of soda. In South Death Valley and in the Canyon of the Amargosa are the well known niter fields. Resting Springs Lake has large deposits of borates, the old works being a few miles west of Lee's Ranch. The Lila C Borax mine is one of the largest deposits of colmanite known in the west, and it is only a few miles further down to Furnace Creek, to the famous deposits in the

JAN 6  
1906

"Sink" of Death Valley. Besides these enormous deposits of salines, this line will develop a very important lead region giving a flux for smelting the refractory ores that is very much needed.

The miners in the Avawatz Mountains and in the Riggs districts, in the Sierran Mountains, have been shipping galena, carrying gold as well as silver, for over a year. At Tecopah near Resting Springs, is a large district that maintained a similar smelter until all the fuel in the region was exhausted. The lead-bearing veins are large and the ores are rich. The limestones of the Kingston Range have yielded many discoveries of galena and carbonates of lead during the last season. The Funeral Mountains are known to contain many valuable mines that only await the coming of the road to be developed.

The Salt Lake Route will open up the mines of the Warm Spring Mountains of the Montgomery district, and the mines recently discovered near Ash Meadows, and there is no doubt but that many discoveries will be made in the mountains north and east of this mine.

The Santa Fe cutoff will open up a well-known copper district around Mt. Whipple, and stimulate the development of the mines in the Turtle, Palen and Old Woman's Mountains in San Bernardino county, California. This line crosses Danby Lake and gives access to the market of the vast deposits of rock salt, soda, gypsum, and cement of that region.

**Distances.**—The distances to the various points are as follows: Los Angeles to Ludlow, Santa Fe, 195 miles; Ludlow to Bullfrog, 158 miles; Los Angeles to Las Vegas, 334 miles; Las Vegas to Bullfrog, 120 miles; Bullfrog to Goldfield, 75 miles.

The advantages that Los Angeles possesses in the market are shown by the following table of distances:

|  | Miles |
|--|-------|
| Bullfrog to Los Angeles, via Ludlow        | 353   |
| Bullfrog to Los Angeles, via Las Vegas     | 454   |
| Bullfrog to Los Angeles, via San Francisco | 1068  |
| Goldfield to San Francisco                 | 518   |
| Goldfield to Los Angeles, via Ludlow       | 428   |
| Goldfield to Los Angeles, via Las Vegas    | 528   |
| Tonopah to San Francisco                   | 436   |
| Tonopah to Los Angeles, via Ludlow         | 459   |
| Tonopah to Los Angeles, via Las Vegas      | 559   |

JAN 20

## Old Excelsior Mine

New Copper District in California Shows Promise.

In the eastern end of San Bernardino county, extending from a few miles north of Cima Station on the Salt Lake Route to south of Von Trigger on the Santa Fe, is a copper belt within which very promising developments have been made recently in several places.

The old Excelsior mine which, for the past nine years, has been dormant, was purchased during last sum-

The company has expended \$25,000 in development, equipment, store, buildings, etc., and it is stated by the officers that \$50,000 is in the treasury for development purposes, besides 25 per cent. of the capital stock to be realized later, should further funds be needed.

The company has on the dump some 600 tons of high-grade ore, and expects to begin shipping to the Needles and Salt Lake smelters by March 15. The mine is equipped with a 25-horsepower West-Coast gas engine, ventilating appliances, etc. The shares are

JAN 20 1906



STANDARD MINES COMPANY'S PROPERTY NEAR CIMA, SAN BERNARDINO COUNTY, CALIFORNIA.

mer by the Standard Mines Company of Los Angeles, who have been sinking a new double-compartment vertical shaft which has now reached the 200-foot station. It is stated that this shaft will be sunk to at least 500 feet with drifts in both directions at every 100 feet.

It is learned that in the old workings of the Excelsior, which comprise an incline shaft in the vein, 124 feet deep, and about 300 feet of drifts, there are exposed about 4000 tons of ore averaging \$9 gold and silver values, and about 13 per cent. copper, the latter occurring as carbonates and oxides.

The vein is in a contact of lime and granite, the latter being the hanging wall. The ore body varies from five to fifteen feet in width, while the vein between walls is 65 feet wide. Values, so far, are found next the foot wall. In the 200-foot crosscut just started for the foot wall, sulphide ore has for the first time been encountered.

held chiefly in Los Angeles and vicinity. Mr. J. E. Meyer is president, Mr. W. B. Holley, secretary and Mr. A. E. Wiley, general manager.

A mile south of the Standard property the Johnny Consolidated Gold Mining and Milling Company is opening a promising vein of high-grade copper ore, and has just installed a sixteen horsepower Fairbanks-Morse hoist and other machinery.

At New York mountain, G. Hamstadt has opened an eight-foot vein of valuable copper ore, and is now driving an 800-foot tunnel, the face of which is 500 feet in, to secure about 450 feet of backs.

The old Von Trigger mine is being reopened with success by Los Angeles capitalists, some five hundred feet of development in all having exposed a strong vein with good values.

All these ores seem to carry from \$5 to \$10 gold and silver besides good percentages of the red metal.

JAN 27

1-27-06 (10)

# FRANKNESS THE CURE

In view of the closer trade relations which a connecting railroad will establish, it is highly desirable that there should be a better understanding between the people of Los Angeles and the northern mining camps of Nevada.

In both Goldfield and Bullfrog there has been an antagonistic feeling towards Los Angeles. In this city there has not been that cordiality which the northern camps deserve. The causes are, in themselves, unimportant—the effects may be readily removed by frank treatment of the subject.

Men went from here to Goldfield and Bullfrog who were not mining men, but represented themselves to be such. They secured options on many properties by the time-worn tricks of the mining hanger-on, only to peddle and hawk them to no good purpose. The owners naturally resented such action. It was not legitimate—it was positively injurious. It was not done by the mining men of this place but by the mining grafters, of whom there are probably no more and no less than any other mining city has to harbor.

Wild-cat properties of Goldfield and Bullfrog were widely advertised in Los Angeles and very many worthless shares were sold. A great many people were taken in and their lamentations, as usual, echoed over the land. Some soreness was created at the time, but the damage was not really serious.

Goldfield and Bullfrog are, beyond cavil, remarkable camps, destined to produce, by legitimate mining methods, remarkable profits in gold.

Los Angeles is a mining center of much importance, the home of many of this country's greatest mining men. It has quietly supplied capital for the development of hundreds of properties throughout the Southwest, very many of which are now on a paying basis. There has not been much publicity about it, for close corporations are the rule. It is, however, the fact that there is no market in this country where capital is so readily obtainable, by men of standing, for mining enterprises that will bear investigation, as among the moneyed men of Los Angeles. The general public is strongly averse to stock speculation, having been bitten. The capitalists are as strongly in favor of legitimate mining, having made money by it.

Los Angeles on the one hand, Goldfield and Bullfrog on the other, can do business on terms of mutual profit. Each has been irritated by the riff-raff of the other. It is time that the good men get together.

1-27-06 (11)

JAN 27 1906

# FOR TRADE EXPANSION

The Tonopah and Tidewater railroad has now reached a point about twelve miles north of Soda Lake; and, through a country favorable for railway construction, is being rapidly pushed on to the Borax Mines and Bullfrog. It is reliably stated that survey parties are now locating the line between the latter place and Goldfield. The road will pass through a lead, copper and gold country of much promise, but which has heretofore been worthless from a mining point of view, because the ores are, for the most part, base, requiring treatment at a smelter. It is the opinion of reliable mining men who are familiar with the district through which the "Borax" road will pass, that good transportation facilities will cause to be there developed a number of important producing properties, besides opening to prospectors a great territory now practically unexplored, but of good general formation.

The immediate importance of the road lies in the closer trade relations which will naturally result between Los Angeles and the Bullfrog-Goldfield country. Of these two camps, Bullfrog is already partially dependent upon this city for supplies—Goldfield not at all. With rail connections completed, both camps will be in closer touch with Los Angeles than with any other commercial center, and the merchants and manufacturers of this place should be keenly alive to the importance of the new territory thus offered for trade expansion.

Goldfield during the year 1905 produced \$2,500,000 in gold—a remarkable record, well meriting the attention it has received from all quarters. That the rate of production will increase rapidly with systematic development of the mines, cannot be doubted.

Bullfrog has been tied up through vexatious grubstake litigation—a phase which, with the release of the Montgomery-Shoshone, is passing. The productive period for that camp also seems to be at hand.

Where gold mines are paying, money is plentiful, trade is intensely active, payments are prompt. The world does not afford a better customer than the man whose gold is taken from the ground.



FEB 10 1906

## Los Angeles Mining Review

### MINING ACTIVITY AT AMALIE

**This Portion of Kern County, California, is Again Attracting Attention. Putting up Mills.**

FROM AN OCCASIONAL CORRESPONDENT.

**A**MALIE, Kern county, California, February 6, 1906.—This district, which has been so long neglected, is showing in a most gratifying way the effect of the general revival in mining interest throughout the Southwest. Several valuable properties are to be worked and equipped on a good scale, while several that were, during the excitement of four years ago, found to be extremely rich on top with a discouraging falling off in values as depth was attained, are to be further explored, largely because of the successful work of Mr. Williams in re-opening the Edith mine. This property has, in the past, yielded rich silver ore, which was found from the surface to a depth of eighty-four feet where the vein pinched out. It was considered a mere surface proposition, and work was abandoned. It has now been demonstrated that the vein had faulted. The continuation has been discovered at twenty-two feet depth in the shaft, and six feet of very valuable ore have been opened up. There is every indication that this is the true vein, and that it will go down.

The Gold Peak Mining Company's 10-stamp mill is nearing completion. The stamps will be of 1000 pounds weight. The company's cyanide plant is of sufficient capacity to serve a 30-stamp mill, it being the intention to eventually bring the whole plant to that basis. There are now some 6000 tons of ore on the Gold Peak dump. Ore is brought from mine to mill by a tramway one and a-quarter miles long. It is stated by the manager, Mr. H. H. Blood, that the mine will be worked systematically hereafter, and that the new reduction plant will enable the company to mill the ore as it comes from the mine with no further necessity for sorting. The company's claims are about to go to patent.

Work has been resumed at the Cowboy mine. A new tunnel is now being driven about 250 feet below the old workings. The last shipment of ore went \$210 the ton. It is expected that the lower tunnel will tap this rich ore-body.

At the Zenda mine a new 10-stamp mill has been installed to supercede the dry-roller process, which has proved very unsatisfactory in the saving of values. An adequate supply of water has been secured from Caliente Creek. The mine, in which are known to be four good pay streaks, will be extensively developed.

At the Barbarossa, the north and south drifts from the bottom of the 64-foot shaft are being pushed with vigor and with satisfying results. The ore shoot, which yielded ore of very high value near the surface, is not so rich but shows every indication of going down.

The Mount Bullion group of eight claims, located some eighteen months ago by Mr. J. B. Hart, is showing great promise under development. On the property there are several parallel veins, averaging about four feet in width, and all of similar character. These veins horn well. It is estimated that, in the various exposures, the ore will average \$10.50 the ton. Water and timber are plentiful at the property, which lies up Caliente Creek about twenty miles from the town of Caliente.

A strike of \$40 ore has been made by Messrs. Kee and Miller on their claims in Stud Horse Canyon. They are preparing to ship from thirty to sixty tons, in order to have a mill test made. The vein averages better than two feet in width.

Work at the lead mines, at the head of Stud Horse Canyon, is in progress, it being the intention to soon begin shipments from Caliente to San Francisco, where the ore is in demand.

It is reported that a 5-stamp mill is to be erected during the coming spring at the Gold Pan mine, on Caliente Creek. The vein is four feet wide, is free milling and carries fair values.

J. A. H.

## RAND DISTRICT, CALIFORNIA.

**Bullion Output Well Maintained. The Yellow Aster, Butte Lode, Sunshine and Sydney Mines. Tungsten Papoose.**

FROM AN OCCASIONAL CORRESPONDENT.

**M**INING OPERATIONS in the Rand district are active and the bullion output is well maintained. This district is so near Los Angeles that you do not hear much about it. Pardon my little joke. The camp has never been notorious for wonderful strikes, yet it goes right along turning out gold, and lots of it, the Yellow Aster being the largest contributor. Here are some details about properties in this camp that are less well known:

**The Butte Lode.**—This property is situated within the town of Randsburg, and is chiefly owned by Los Angeles parties. Since it passed under the management of Mr. Percy H. McMahon it has been a good payer. Operations are at present on the full length of the vein, by three working shafts. The most easterly shaft (No. 6) is down 540 feet; next to No. 6, in a westerly direction, is the "Road" shaft, located on the road which leads to Johannesburg. This is down 440 feet. Westerly of this, and near the west end of the claim, is the "New" shaft, 450 feet deep. The location of the shafts represents the three ore shoots on the property. While the ledge has been small the grade of the ore has been over \$60 per ton, insuring a handsome profit to the company. This property has been mined, and ore extracted from the grass roots down to the present depth.

In the 440-foot level of the "Road" shaft, sulphide ore has been encountered. A crosscut of eighteen feet was run through this sulphide ledge at that level and without encountering the hanging wall. This ledge shows a straight milling value of \$10 per ton. Further exploration on this part of the ledge has stopped until the drift from No. 6 shaft, which is 100 feet deeper, has made connections with this point. The sulphurets in the ore is about 2 per cent, and after the gold values have been amalgamated this concentrates \$95 per ton. Down to this point the ore has been characteristic of the camp, that is, the walls of diorite and schist. The dip of the vein has been about 45 degrees, but it is pitching steeper with depth.

A winze is being sunk from the 440-foot level of the "Road" shaft to connect with the drift of the 540-foot level of No. 6 shaft. In sinking this winze seventy-five tons of the ore were lately milled at the Red Dog mill showing a plating value of \$87 per ton, with \$10 in the tailings, to be later cyanided; this serves to show that deep mining in Randsburg has a bright future.

**Sunshine Group.**—This group of claims is owned by Messrs. B. M. and T. W. Atkinson. It is located two miles from the town of Randsburg in the Stringer district. These claims were located in 1896 and operations have been carried on since. They are down 300 feet with a vertical shaft and in good ore. The ledge varies up to 18 inches in width and runs about \$50 per ton. Ore has been taken out which has run around \$300 per ton. The ledge matter is in schist. This mine has more than paid its way, they have a nicely equipped plant. It consists of a 15-horsepower gasoline hoist, 3-stamp mill, 14-ton cyanide plant, and a 3-drill air compressor, which is gas engine driven; fifteen men are at present employed.

**Sydney Group.**—Leaving the town of Randsburg, traveling for about seven miles in a southwesterly direction, passing the Baltic, Sunshine, and other mines, you reach the Sydney group. This property is located on the south side of the famous Rand Mountain. It was opened in 1897 by Mr. A. C. White and has been worked by him ever since, he keeping eight men employed. The group consists

of five claims, the principal work being done on the "Sydney Annex," which has a shaft 200 feet deep, with 879 feet of drifts on its west and 350 feet of drifts on its east sides. On the west side, drifts are connected by shaft for air circulation; good ore has been found throughout the present 72.80 ounces, having a cash value of \$1184. The intention of Mr. White is to sink the shaft another 100 feet, and continue it to a depth of 1000 feet.

**The Papoose.**—This is a tungsten property, and was recently sold by its locators to Messrs. De Golia and Aitken for \$114,000. Those, at least, are the reported figures. The mine is

opened to a depth of fifty feet and it workings, and has paid for further exploration as well as all improvements. The ore is becoming better with depth, and free gold is easily seen. The ledge is now about three feet wide, and is in schist. The last milling of forty-three tons netted them is the announced intention of its present owners to put it deeper. The vein which carries the richer scheelite is about eighteen inches wide, of which eight inches is ore of very high grade. A new shaft has been started at another point on the same vein, and is now twenty-five feet deep in good ore. The better grades extracted are being sacked for shipment, and the balance will, it is said, be concentrated. Three carloads of tungsten ore have been shipped from this property since September of last year. Randsburg, California, February 12, 1906.



VIEW AT SUNSHINE MINE, RANDSBURG, CAL.

FEB 17 1906

FEB 17 1906

FEB. 17, 06 (p. 12)  
**Los Angeles Mining Review**

FEB 17

FEB 17 2-17-06 (125)

**CALIFORNIA.**

**Kern.**

**Randsburg Miner:** The DeGolia-Atkins Co., which recently purchased the tungsten properties belonging to the McCarthy-Taylor Co., will make another shipment of about twenty-five tons. This shipment goes to Germany by way of New York and is of a higher grade than the last shipment made by the McCarthy-Taylor Co.

FEB 17

**San Bernardino.**

**Needles Eye:** The Golden Queen mining property situated south of Amboy has lately disclosed a large body of ore running well up in values.

**Redlands Citrograph:** The good news comes from Colton that the California Portland Cement works at that place is to be enlarged to four times the present capacity, the improvements to cost \$250,000.

**Randsburg Miner:** It is reported that Vald Schmidt has discovered quite an extensive body of high grade tungsten ore in his mine in the Stringer district known as the "Nine Spot."

**Redlands Citrograph:** The good news are figuring on the long tunnel for the Arrowhead Reservoir company, which is to bring the waters of the Mojave River through the mountain ridge from the north, or desert side to the south side. Work on this tunnel is to be prosecuted both ways from four shafts besides the north and south headings, thus enabling the work to be completed in one-sixth the time were only two headings employed.

The Needles Eye reports that the fires have been started in the furnaces of the Needles smelter, owned by the Arizona-Mexican Mining and Smelting Company.

**Riverside.**

**Needles Eye:** C. E. Wilbur, manager of the Standard Nitrate Company is in the city from Chimehuevis Valley, where the properties of the company are located. The company is building a reduction plant and it was necessary for Mr. Wilbur to obtain a quantity of pipe for the completion of the plant.

2-17-06 (125) **San Diego.**

The San Diego News says the Cuyamaca Mining Company, owner of the Stonewall and Oriflamme mines, is preparing to commence active operations on the latter property. The ten-stamp mill now on the mine will be reinforced by an additional ten stamps. This step has been determined upon as the result of a report to the directors of the company made by an engineer who was recently sent here to examine the property.

**San Diego News:** William Hill, who has charge of the San Diego Gem Company's Hyacinth mine at Dos Cabezas, in this county, reports that he is finding some fine gems, and that the quality of the stones improves as depth increases. This is the mine from which the big hyacinth crystal, which recently sold for \$500, was taken.

Bert Simmons writes from Oak Grove that he has recently struck a pocket from which he has taken several ounces of blue tourmaline crystals. The find is in the Chihuahua Gem and Lilia mine.

The Escondido Advocate states that a body of lead and zinc ore, carrying gold and silver values, has been encountered in the Surprise mine. The company is putting down a shaft.

**San Diego News:** C. O. Johnson has recently returned from a trip to the Mesa Grande district. He reports considerable activity in the various gem mines. He says the mines are all being developed in a more systematic manner than heretofore, which promises much for the success of the camp.

**Inyo.**

The Inyo Register says that Mr. M. F. Showalter who is erecting the mill at Darwin, has almost finished placing the machinery in the new building, and that the plant is expected to run within ten days. The next labor in view is the construction of oil tanks at Keeler, so that the mining and milling company, which will use that fuel, can empty tank cars as fast as they come in and haul the stuff out to Darwin as convenient.

**Inyo Register:** A party under direction of N. T. Bacon, a New York engineer, is making extensive investigations on the shore of Owens Lake between Ash and Cottonwood creeks.

Chemical tests of the lake water are frequent. The investigators are believed to represent New York road interests, but are disinclined to give any information.

FEB 17



2-24-06 12  
**MINING OPERATIONS**

CALIFORNIA. FEB 24

**Kern.**

The Orphan Girl mine, in the Stringer district, near Ransdurg, has been purchased by Chanslor and Canfield, the oil operators.

Two strikes have been recently made in the Karma mine at Mojave, one at the 370, the other at the 550 level.

**San Bernardino.**

Randsburg Miner: The St. Elmo mine has opened up again with five men working and five more will be put on in a few days. C. S. Pillor is superintendent in charge.

**San Diego.**

San Diego News: The Cleveland and Pittsburg Mining Company, whose mines are near Escondido, is successfully working the tailings from the mill by the cyanide process.

Mr. D. McIntosh has sold to the San Diego Gem Company, a sixth interest in the Little Three gem mine near Ramona.

**Inyo.**

Inyo Independent: At Lone Pine the Mt. Whitney Company is drifting both ways on the ledge and has thirty-five or forty feet yet to go in order to have direct connections with the main tunnel. The ore shoot extends to the east a great deal farther than was expected and they are taking out some very high grade ore.

The Keynot Company has developed some rich ore in the lower tunnel on their War Eagle Claim at Beveridge.

A shipment of ore is ready for forwarding from the Mentezuma mine, at Big Pine, as soon as cars can be had. There has been a recent strike made in the old mine of a big body of talc carrying good values.

The Independent. A new strike which promises to be of great importance was recently made by R. E. Lambertson and F. H. Tillson in Goler Canyon, about sixteen miles south of Ballarat. The ledge will average about four feet wide and the pay shoot as near as can be ascertained from the surface is four hundred feet long.

The Pleasant Canyon Mining and Milling Co. is putting up a new stamp mill at the Republican mine, at Ballarat.

A new strike is reported to have been made at Harrisburg close to Emigrant Springs.

The owners of the Eureka group near Ballarat have sold a half interest to San Francisco people who paid \$15,000 down and are to put up a mill and do some development work.

**Los Angeles Mining Review**

15

FEB 24 1906

2-24-06 15  
**NEEDLES SMELTER WANTS ORE.**

**Santa Fe Makes Low Rate on Copper Ores from Eastern California.**

It is learned that Dr. L. D. Godshall of Arizona-Mexican Mining and Smelting Company's smelter at Needles, California, will this week be at the Standard Mines Company's property near Cima in eastern San Bernardino county, to arrange for purchase of that company's copper ores.

The Standard Mines are within fifteen miles of Ivanpah on the Santa Fe branch line, and within eleven miles of Cima on the Salt Lake Route.

The Santa Fe railroad has made a rate of \$1.10 a ton from Ivanpah to the Needles on ore running below \$15 per ton, and of \$2.05 on ores running above that value.

Officers of the company, which is a Los Angeles concern, state that shipments amounting to ten tons a day, or more, will begin shortly, and that high-grade ore alone will be shipped; the lower grades will be stored until such time as the company shall build a smelter at the mine. It is expected that shipments to the Needles smelter will be sufficiently profitable to pay for further development and equipment of the mine. The Salt Lake Route has also made a low rate on these ores to Salt Lake City.

2-24-06 15  
**GOOD NEWS FOR SEARCHLIGHT.**

**Connecting Railroad to the Salt Lake Will Be Broad Gauge.**

It is for the first time authoritatively announced that the new railroad connecting the Salt Lake Route with Searchlight, Nevada, will be of standard gauge, instead of narrow gauge, as originally planned.

Dr. Homer A. Hansen of this city, president of the Searchlight and Northern Railroad Company, interviewed by a representative of the Mining Review, said:

"It has been determined, subject to the consent of Colonel C. A. Hopkins of the Quartette Mining Company, who is also a heavy stockholder in the Searchlight and Northern, to build a broad-gauge road; and to this end we have bought a sufficient quantity of heavy rails from Mr. Bamberger at Salt Lake City. We have become convinced that a narrow-gauge road will not be up to traffic demands. Colonel Hopkins is now on his way from Europe, and his consent will no doubt be forthcoming as soon as he lands at New York and understands the situation."

The determination of the directors of the Searchlight and Northern to build a standard gauge road has been brought about by the action of the Santa Fe Railroad in rushing surveys for a competing branch to Searchlight. There has for months past been keen competition between the two railroads for the growing freight and passenger traffic of Searchlight, which shows every indication of permanency. Some four months ago the Searchlight and Northern was organized to connect with the Salt Lake at Nipton, and much disappointment was felt when it was learned that the road was to be of narrow gauge. The Santa Fe people, not relishing the threatened loss of their share of a valuable traffic, promptly put surveyors in the field who have nearly completed the location of a broad-gauge line to Searchlight, construction of which is to begin almost immediately. The standarding of the Salt Lake's branch line has thus become a necessity, with the result that within a few months both Salt Lake and Santa Fe trains will be running direct to Southern Nevada's banner camp.



MAR 10 1906

14

3-10-06 (14)

**CALIFORNIA.**

**Kern.**

Randsburg Miner: The Butte mine is working in very rich ore and lots of it at a depth of 225 feet. The deepest shaft on the mine is something over 600 feet and shows valuable ore at the bottom. The prospects of the mine were never better.

**San Bernardino.**

Randsburg Miner: Some very rich ore has been struck on the Orphan Girl in the Stringer district.

**Inyo.**

The Ballarat correspondent of the Independent writes: "It is reported that L. L. Patrick and associates will take over the Keane Wonder mine. This property lies south of Bullfrog, near Death Valley. Superintendent E. H. Widdekind and Mining Engineer Fred Cox have just made a preliminary survey for a mill tram from the mine to the mill, which the Patrick people intend building at once."

J. J. Mills and partners are considering a sale to Milwaukee capitalists, who intend to put on a force of men to work in the Slate range, opposite Goler Canyon.

The new mill at Darwin will be ready for work in about a month



HAULING ORE TO THE RAILROAD IN EASTERN SAN BERNARDINO COUNTY, CALIFORNIA

## IN SAN BERNARDINO COUNTY

### Another Important Strike in the Standard. Active Work in the Johnny and Copper King

**R** EPORTS FROM eastern San Bernardino county California, indicate that a strike of much importance has been made on the Standard Mines property, 500 feet southwest of the main working shaft and on the strike of the vein.

A cropping discovered at this point has been opened by a surface cut, revealing an ore body 25 feet wide and of high grade. Samples brought to Los Angeles this week are of heavy oxide ore carrying sulphides. Assays of two samples taken by the manager returned 21.28 and 22.56 per cent. copper, with low gold and silver values.

The company now proposes to drive the first and second levels, which are but 200 and 130 feet, under this discovery which is being further opened by surface work.

The main vertical shaft is now down 220 feet and has passed through a four foot vein which was encountered

at 220 feet. A crosscut is being run to this vein, and sinking is in progress for the 300-foot level. The upraise from the 200-foot level has encountered an ore-body which is of the same high-grade as that in the winze from the 100-foot level of the old workings. The face of the 200-foot level is in mineralized vein matter with stringers of carbonate ore.

The company is preparing to increase its force to seventy-five men, and has laid out some 2000 feet of development work for this summer. The main shaft will be sunk to 500 feet as rapidly as possible.

Total shipments now amount to twenty-eight cars. During May 6000 tons of ore were shipped to Salt Lake City, and the same rate has been maintained this month.

The sixteen-horse teams engaged in hauling this ore to the railroad make three round trips a week each, and

take twenty tons to the load. The illustration herewith is typical of freighting in the desert regions of the Southwest.

The incline shaft of the Standard No. 2, an adjoining property under the same management, is now down 160 feet. A crosscut has been started from a station at 150 feet towards an ore-body that was opened at the 100-foot level. A high-grade surface strike was made last week on this property which is now being prospected. On another claim of the Standard No. 2 property a silver-lead vein of good promise has been discovered and is to be developed.

Adjoining the Standard No. 2 is the Johnny Gold Mining and Milling Company's holding which is being energetically developed. This company owns and operates the Johnny mine in eastern Nevada near the Utah line, which is not to be confused with the Johnnie mine in Nye county, Nevada. The owners are Mr. W. J. Halloran, a capitalist of Salt Lake City, and Messrs. Frank and John Willson, also of Salt Lake. Their copper property near the Standard is now opened by a

shaft 200 feet deep and 400 feet of lateral workings, exposing vein matter with rich stringers. The showing is considered favorable by the company's engineers.

Adjoining this property and also the Standard No. 2, is the Copper King, recently bought by the Quartette interest. The new owners have established their camp and are rapidly sinking three prospect shafts, all in ore. A hoist is already on the ground and will be set up in the near future.

The Jim Crow mine, an old silver-lead property which has yielded very rich ores, and which lies one half mile east of the Standard, is to be reopened by the owner, Mr. A. E. Morse, of Manvel, California.

Mining activity in this section has so increased of late, that it is now proposed to establish a town-site with a warehouse and boarding house at Cima. The railroad company has, it is understood, undertaken to supply water as is done at other points along the line. Cima is now a shipping point for ore and as such seems likely to become the center of a prosperous district.

JUL 7 1906

7-7-06 (15)

## Los Angeles Mining Review

### THE COLORADO RIVER

**It is Likely to Become a Factor in Mine Development.  
Flows Through Rich Mineral Country**

**I**T IS LEARNED that the line of the Arizona and California Railway has been finally located in eastern San Bernardino and Riverside counties, California.

This section of the survey has been made with particular reference to probable mine development. The region is rich in gold, and in places it is reliably reported to be very rich in copper. The line will strike the Colorado River at Eagle Landing, which is opposite to Parker, Arizona. At that point will be built the great steel bridge, construction of which will delay completion of the through line for about a year.

The Colorado River, between the Needles and Yuma, has possibilities as a highway for transportation of ores and other freight, and it is probable that very considerable mine development will be undertaken in the hills bordering it, both north and south of Eagle Landing. This should be particularly true of the region near Monument Peak and Whipple Mountain, in southeastern San Bernardino county. There are known to be copper pros-

pects of much promise both as to width of veins and surface values. From Mount Whipple south, to Ehrenberg and beyond, are the remains of old camps on both sides of the river, where, with water and rail shipping facilities, profitable development may

probably be accomplished in the near future.

In former years the Colorado River was a highway for ore shipments from Fort Mohave, seventy miles north of Eagle Landing, to Yuma and the Gulf of California where schooners were loaded for San Francisco. It may again play an important part in the development of that portion of the southwestern mining region.



EAGLE LANDING ON COLORADO RIVER, WHERE ARIZONA & CALIFORNIA RAILROAD WILL CROSS

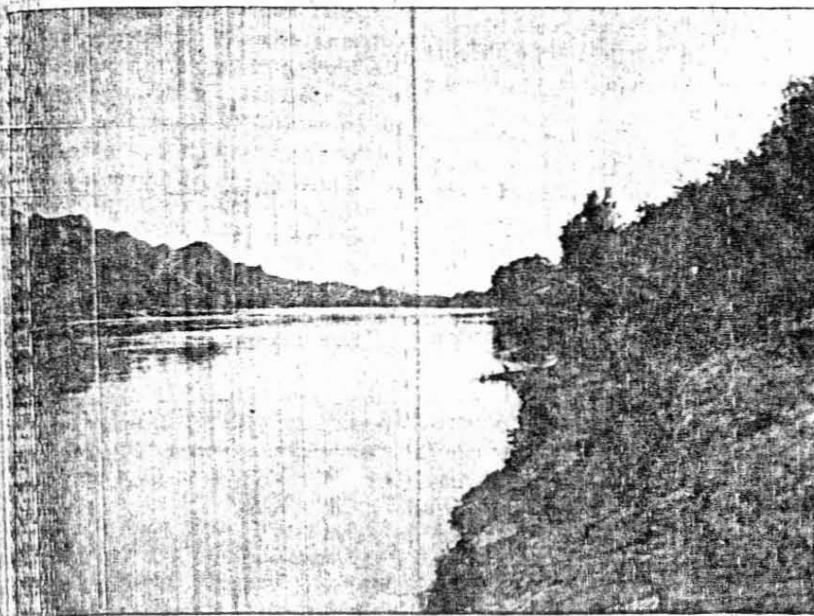
CALIFORNIA.

San Bernardino.

The Randsburg Miner says: "Mr. J. E. Pagh has sold the South Side group of quartz-claims, consisting of the Iowa, X-Ray, Tom Reed, Robert S and Michigan, to the Stauffer Chemical Co., of San Francisco. The claims are about one and one-half miles above the St. Elmo station in a northerly direction, and about four miles east of Randsburg. The prospects indicate valuable tungsten deposits."

A fifth shipment of tungsten ore has been made from Randsburg, coming from the tungsten mines of which Mr. Charles Taylor is superintendent.

The Pacific Coast Borax company has shut down its works near Daggett, this county. This is the regular summer shut down during the heated period.—Redlands Citigraph.



SCENE ON THE COLORADO RIVER



## THE YELLOW ASTER MINE

**Treating Five Hundred Tons of Ore Daily, and Will Soon Increase the Tonnage**

WRITTEN FOR THE MINING REVIEW

**T**HE YELLOW ASTER continues to occupy first place among the great gold mines of the Southwest. The management is put-

ed just as soon as present plans for additional water supply are completed.

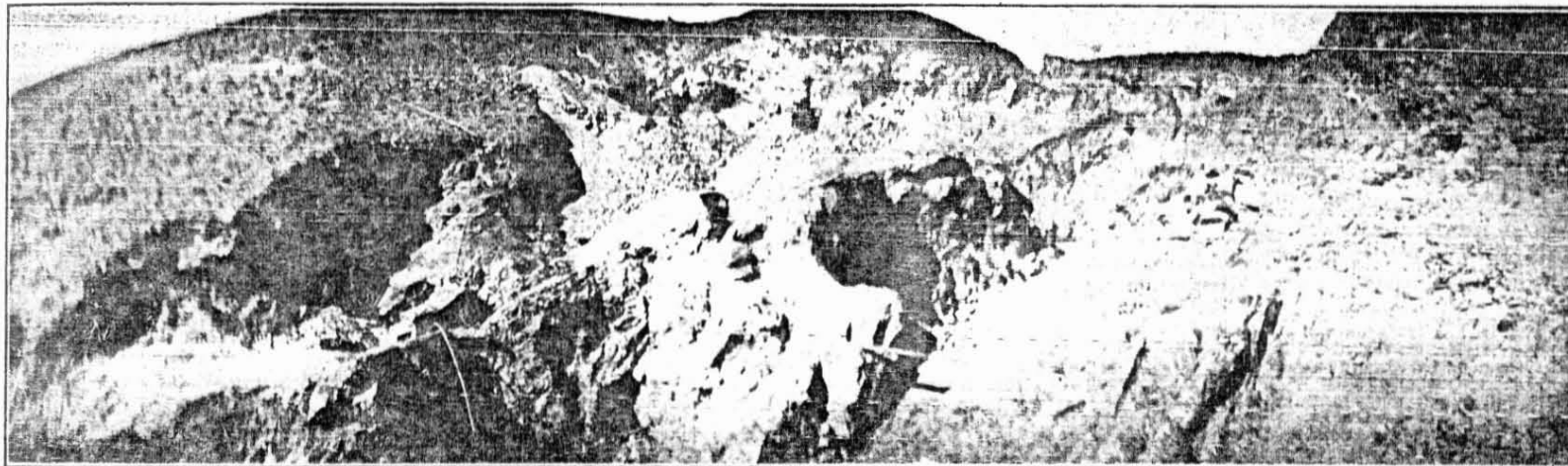
The company has now two bored wells finished, one known as the

company's two stamp mills at Randsburg to treat 500 tons of ore a day but as soon as the new wells that the company is now having bored are finished, it will be in a position to run its stampage up to twenty-five thousand tons of ore a month.

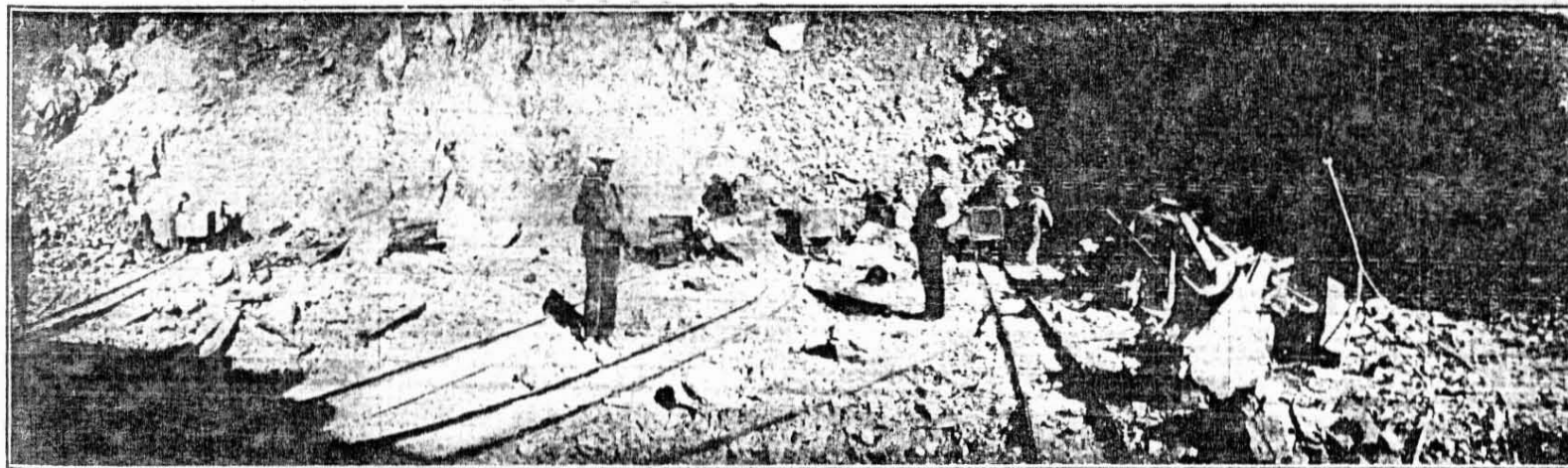
While water was short the company took but a comparatively small quan-

furnishing a more ample supply the intention is to again quarry from these two open cuts. It is very pretty mining, nothing easier; just blasting away in the open and sending everything down the rails to the mill.

Taking it all in all, there is not as this writer well knows, a prettier mining proposition in the world than



UPPER GLORY HOLE AT THE YELLOW ASTER MINE, RANDSBURG, CALIFORNIA



MIDDLE GLORY HOLE AT THE YELLOW ASTER MINE, RANDSBURG, CALIFORNIA

through an average of five hundred tons of ore every twenty-four hours, which tonnage will be increased

Mountain Well, the other the Goler Well. From these two wells enough water is pumped and added to the

tity of its ore supply from the Upper and Middle Glory Holes, but now that the Mountain and the Goler wells are

the Yellow Aster; there is no sorting; every pound of the ore can be treated and yield profitable returns.



JUL 14 1906

JUL 14

# RATCLIFF MINE BONDED.

Well Equipped mine at Ballarat Will Probably be Reopened. Panamint Range Becoming Famous.

It is learned that the Ratcliff mine at Ballarat, Inyo county, California, is now under option to Salt Lake mining men who propose, examination of the property proving satisfactory, to reopen it on a very extensive scale. This property has been idle for some four years, having been closed down by creditors under foreclosure of mortgage. It is stated that while the ore bodies exposed were of good grade, there was not sufficient development of reserves, with the usual result that the management suddenly found itself out of ore, and without funds to explore for other bodies.

The mine is equipped with a twenty stamp mill which is said to be in good condition, as also a pipe line conveying a good water supply from Stone Corral, nearly three miles distant. The full equipment of machinery represents an expenditure of some \$40,000.

Ballarat is one of the oldest camps in the desert. It was originally worked for silver and its history is that of scores of payable districts throughout the Southwest. In 1898, however, there was a new activity, good gold discoveries having been made. Since that time development has been active though bad management in some cases and litigation in others have helped to hold the camp back. It lies

in the Panamint Range which is now widely known by reason of recent discoveries made in the Emigrant Springs and Wild Rose districts, near Ballarat,

by mining men from Goldfield and Bullfrog. These districts are reported by engineers to be of excellent promise, and a bright future is expected for

them; not only because of valuable veins known to exist, but because of the strength and ability of several operators who have become interested.

## IN THE AMALIE DISTRICT.

New Mill in Kern County's Silver Region. Two Sales Reported.

The Gold Peak Mining Company's Mill, in the Amalie district of Kern county, California, is now running regularly on ore of good grade. It is learned that the Zada vein of this company has recently been opened by a crosscut tunnel at a depth of 558 feet below the apex, with values averaging about \$17 a ton in silver though some of the ore is of very high grade. The vein varies from three to eight feet in width.

The new mill is of ten stamps and is equipped with four vanners besides leaching and sliming plants. It is stated that ore to the gross value of \$100,000 has been shipped from this property.

The Cowboy mine in the same district has been bought by a Los Angeles syndicate and is to be worked on a good scale.

It is reported that the Old Dominion Mine has been sold, subject to clearing of the title, which is to be effected at once.

7-14-06 (1)

## THE SEARCHLIGHT DISTRICT.

Desert Queen Bonded. Strike in Duplex Mine. Extensive Long Distance Telephone System

(16) Planned. 7-14-06

THE HIGH GRADE ore recently struck in the New Year's Gift shaft of the Duplex mine is holding its own, according to Superintendent Barnes, says the Searchlight newspaper. It has been stated that the rock is running \$130 and that a five-foot vein of this value is being worked. A large force of men is at work in the shaft and also preparing the mill for operation. The mill will probably be completed and running this week.

W. E. Seeley and W. S. Rawlin who have a camp in the McCullough mountains, report having discovered a fine spring of water about four miles north of Goodwater Spring, to which they have decided to move. In the latter vicinity Seeley and Rawlin have found a number of good leads which have horned free gold from rock taken on the surface and which they will thoroughly prospect as soon as they have their camp arranged.

W. H. Smith of Vanderbilt, Cal., has bonded for \$100,000 the Desert Queen group, belonging to Green, French and Wallace, and located about eight miles northeast of Blackburn siding, on the Santa Fe, south of Manvel. On these claims is a large porphyry ledge 130 feet wide, in which there are quartz stringers assaying from \$400 to \$500 per ton. The porphyry and talc between the seams horn free gold and assay \$4 to \$26 per ton. The values come in gold, silver and lead. It is further claimed that the ledge samples about \$11 clear across. It is a free milling proposition. The shaft is now down about 30 feet, with every indication of striking water within a short distance.

W. B. Atwell, manager of the Searchlight Western Telephone company, has just returned from a trip during which he laid out a route for the extension of the lines of that corporation. The new line will start in from Johnnie Siding and go to Johnnie. From that point the line will be built to Parump, through to Manse, thence to Tecopah and from that point along the line of the T. & T. Railroad, returning through to Sandy where it will tap the Copper World mine. From the latter point the line is intended to go to Cima, thence to the Standard mine, from which place it will terminate at Leastaik. The line will also go through Ivanpah. The distance proposed to be covered by this company will be 240 miles which includes the main line and branches. Construction work will commence within ten days. The material has been ordered.

JUL 21 1906

## AMARGOSA REGION.

7-2106 63

Map of It in California and Nevada  
Now Completed.

About a year ago, topographers of the United States Geological Survey began work on a map of the desert south and southeast of Tonopah. The map, which is drawn on a scale of about one inch to four miles, is now finished and ready for distribution. It covers an area of nearly 8600 square miles, about one-eighth of it in California, including that part of Death Valley north of the Furnace Creek Ranch.

Conspicuous on the sheet are the northern end of the Panamint Range, Tin Mountain, Gold Mountain, State Ridge, and the hills to the east north of Lida. The town of Lida is about one-half mile within the map. From this point northward to

latitude 38 degrees the map joins with the Silver Peak map which was finished in 1898. The region east of Goldfield is shown as far as the southern portion of the Railroad Valley. The positions of Blake's Camp, Longstreet Ranch and Eden are indicated. New Reveille is just on the edge of the northern boundary, but the old town lies about three miles to the north of it. To the south of the Railroad Valley are the eastern foothills of the Belled Range, and Oak Spring Butte, a landmark of importance to the thirsty traveler, lies about four miles within the boundary line of the map.

The southeast corner of the map is a few miles northwest of the Johnnie mine. The Bullfrog-Las Vegas freight road is shown to a point several miles east of Point-of-Rocks. Ash Meadows Station is just south of the southern boundary and is not shown.

Mountains and valleys are indicated by contour lines, the contour interval being 100 feet. Elevations above sea as frequently shown by figures, range from between 9500 feet at the Kawich Peak to about 300 feet below sea in Death Valley near Furnace Creek. The white mud flats of the region are shown in outline by dotted blue lines. Several old and many new mining camps lie within the area, the boundaries of which have been approximately outlined. These include the old camps of Montezuma, Lida, and Horn Silver mine, and the new camps of Southern Kawich, Oak Spring, besides the Bullfrog-Beatty-Rhyolite district. Bench mark posts are in place along the road from Tonopah to Bullfrog via Lida. The Nevada-California State line posts are indicated on the map.

A feature of special importance about this map is its careful location of watering places with the roads and trails between them. Altogether it is felt that this new atlas sheet should be of material assistance to the traveler, prospector, miner and engineer, and no inconsiderable factor in the development of the region. The map was made by Mr. Benjamin D. Stewart. It is designated as the map of the "Amargosa Region," and may be purchased, at 15 cents a copy, on application to the Director of the Geological Survey, in Washington, D. C.

JUL 21 1906

7-21-06 (7)

## THE GOOD HOPE

This Old Property Sold and Will be Reopened.

It is reported that the Good Hope mine near Perris, Riverside county, California, has been sold by Messrs. Hook Brothers to the Shaft Rock Mining Company, organized to take over the property. The new company proposes to modernize the plant and expects to work the mine on a large scale.

The Good Hope is one of the few interesting properties of Southern California outside of those now being worked. Some twelve years ago Colonel Keyes, then president of the Board of Trustees of the State Mining Bureau, examined this and other properties, and stated it as his opinion that the mineralized zone of the Pinacate district was a southern continuation of the Mother Lode of California; and that the Tehachapi range intervening, was of subsequent formation to the Mother Lode and did not, as was generally believed, limit its southerly course.

This pronouncement by Colonel Keyes aroused great interest in the mines of the district. The Good Hope mine was, as a result, developed quite extensively and to a depth of over 600 feet. The mine was also equipped with a mill and hoisting works, as shown in the accompanying illustration. In March, 1898, a strike of very rich ore was made in the 600-foot level where the vein was three feet wide. It was at that time stated that for the width of the vein values ran into the hundreds of dollars. The operators found much difficulty in treating the ore, however, and for this and other reasons the mine was closed down and has been idle to the present time.

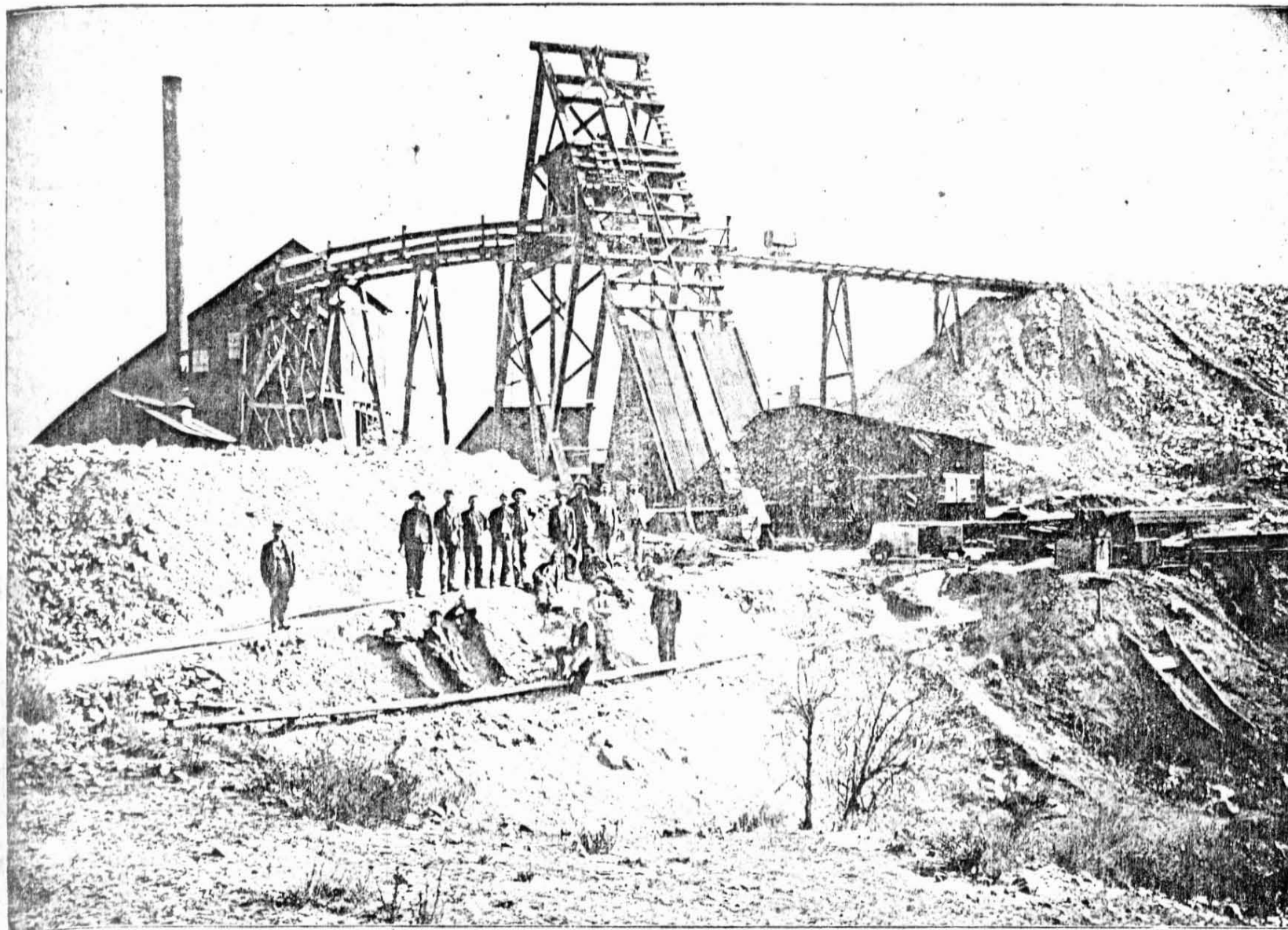
It has been stated by engineers and mining men that the formation is favorable for strong veins and good values at depth. If the new company is successful in working the ores by modern methods, it is probable that development of neighboring properties will be undertaken.

JUL 21 1906

Los Angeles Mining Review

July 21, 06

7



THE GOOD HOPE MINE, RIVERSIDE COUNTY, CALIFORNIA

JUL 21 1



JUL 28 1906

## BONANZA KING PRODUCING

Famous Old Silver Mine of San Bernardino County Again Yielding Bullion. New Mill a Success

**T**HE NEW ten-stamp mill at the Bonanza King mine, north of Fenner in San Bernardino county, California, went into commission last week and is now reducing from thirty to thirty-five tons a day of ore which averages 60 ounces silver and 10 per cent lead.

The Bonanza King is an old property, once famous as a producer of silver bullion, which has been closed since 1885, when the old mill burned down. The property became at that time involved in litigation which was finally settled last year. It has been under development since then by the Trojan Mining Company of Los Angeles, which leases the mine from the Bonanza King Development Company. The lease is for fifteen years at \$10,000 a year. Shareholders of both companies are the same.

The new mill, built by the leasing company, is of modern design with 1050-pound stamps. There are also four Frue vanners and a pan-amalgamation plant. The water supply has been developed during the past year and amounts to 25,000 gallons daily.

The mine is now developed to a vertical depth of 520 feet, and with about

six miles of underground workings. The Trojan company has run out the fourth, fifth and sixth levels, and above these has upward of 50,000 tons of ore blocked out besides 20,000 tons on the dumps. The entire ore expos-

ures average, by recent sampling, about 60 ounces silver and 10 per cent lead.

The ore bodies occur in a mineralized zone, 400 feet wide, between a porphyry dike and a granite-lime contact, the vein matter being lime in which are found frequent and often very large chambers of high grade ore. The mine is equipped with a steam hoist, and a diamond drilling plant is to be installed in the near future. Fifty men are employed in mine and mill.

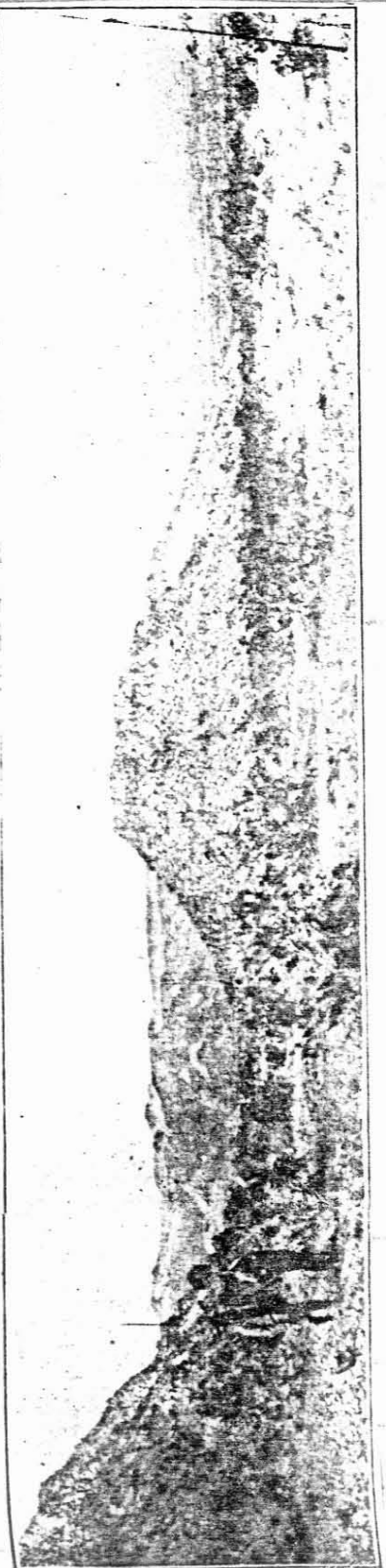
The new mill has been tried out during this week and is found satisfactory, a 93 per cent. saving of the assay values having been effected, of which 25 per cent. is by concentration.

Mr. J. H. Montay, president of the company, states that the property will from now on be worked actively and that development of ore bodies, both by the usual methods and by diamond drilling, will be kept well ahead.

Mr. J. Herbert Montay, president of the Bonanza King Development Company and of the Trojan Mining Company, came to Los Angeles, early in 1905 from Cincinnati, Ohio. He became interested in the Bonanza King and, after investigation, bought a controlling interest in the company. He has given his entire attention to the re-equipment and further development of this old property. Mr. Montay, formerly a broker in Cincinnati, will devote himself entirely to mining enterprises henceforth.



J. H. MONTAY



THE BONANZA KING MINE, SAN BERNARDINO COUNTY, CALIFORNIA, SHOWING THE GREAT CHOPPINGS

JUL 28

JUL 28

AUG 4 1906

# Los Angeles Mining Review



NEW TEN STAMP MILL AT THE BONANZA KING MINE

# Los Angeles Mining Review

AUG 4, 1906

AUG 4

13

## THE VON TRIGGER COPPER MINE

**Recent Developments in Eastern San Bernardino County Expose Rich Ore. Company Rushing Work**

**I**T IS LEARNED that a strike in the old Von Trigger mine, in eastern San Bernardino county, California, made some few days ago, is considered the most important discovery in that property. At a depth of 200 feet, shaft No. 3 has opened, as reported by Mr. A. H. Cram, president of the company, a large body of heavy sulphide ore, which carries high average values in copper.

Mr. Clay Peters, formerly president of the MacNamara mine at Tonopah, and a pioneer of that camp, who has recently bought the west extension of the von Trigger property, called at the office of the Mining Review this week, and speaking of the district, said, in substance:

"The von Trigger copper belt, while limited to from two to three miles long by one-half mile wide, reminds me more of Butte, Montana, than any district I have seen in the Southwest. The California Gold and Copper Company's property is traversed from east to west by two remarkably strong veins. The more southerly of these has been opened by two shafts 500 feet apart. These have been sunk, respectively, to the 100- and 200-foot levels. Both of them struck chalcopryite and bornite at about 80 feet.

"Besides these two shafts, there are very considerable lateral workings, exposing high-grade ore. The vein is of unknown width, no hanging wall having been reached; but it is believed to be over 100 feet wide. The rich ore occurs in parallel streaks in the vein matter. These run up to 10 feet in width, and carry extremely high values. I understand that the vein matter is mineralized, and will pay to work on the ground.

"The north vein is opened by a shaft 100 feet deep, and is similar and parallel to the one just described.

"Ore from both veins is of excellent quality for smelting, having sufficient iron and lime to make it self-fluxing, premium ore. The water level in both veins has been found at 100 feet, and in shaft No. 3, values have increased with depth below water level.

"Speaking generally, the country rock in this belt is diorite, with, probably, limestone or quartzite for hanging wall rock. On either side of the belt, and close to it, is a range of malapai hills."

Mr. Peters states that he will, in the very near future, begin development of his property, comprising eight claims, and on which both the von Trigger veins crop strongly. The first development will be by contract for a shaft 200 feet deep.

The California Gold and Copper Company is now vigorously opening the two veins, twenty-five men being employed. The mine is equipped with air drills and a powerful hoist. The company proposes to erect a smelter as soon as ore bodies, sufficient to warrant the investment, have been blocked out.

# Los Angeles Mining Review

AUG 4 1906

AUG 4 1906

1906

AUG 11

AUG. 4, 06 (11)

## TRANSPORT AND MINES

It has been aptly said that prosperity depends upon supply, demand, and transportation. It is also stated that the mineral products of the United States are responsible for 52 per cent. of the railway freight traffic of this country.

There is no feature of the present mining situation more encouraging than the activity shown, throughout the West, and particularly the Southwest, by railroad builders. Of the many new lines under construction or projected west of the Rocky Mountains, and south of the fortieth parallel, each one, we believe, is designed in whole, or in part, to be an ore-carrying road; and this, very largely, because improvements in mining and smelter practice have so reduced costs of extraction and treatment, that gold ores of a grade considered worthless a few years ago may now be worked profitably; while the rise in prices of copper and silver has made payable many millions of tons of ore that ten years ago were worthless.

It begins to be apparent that copper mining in the West is to exert almost as important an influence upon railway expansion, as has iron mining in the East; and that, given the railways, many localities now uninhabited, will become permanently settled and productive. Coincident with railway development, is the very notable increase of smelters throughout the Southwest and Mexico—a sure indication of the vastly increased tonnages now available.

Railways are not built, nor are great custom smelters, involving expenditures of from one to five million dollars, constructed for the benefit of mining regions that are to be short-lived. Such vast enterprises as are now under way in mining regions of the West and Mexico, have been undertaken deliberately, after long and thorough investigations, and because of ample surety that first cost, operating expenses, interest and profit will be returned by the mines. Two \$5,000,000-plants are to go up on San Francisco Bay; there are persistent rumors, seemingly well founded, that a great custom smelter is to

be built at San Pedro; several large plants are under way or assured in various parts of Mexico. It is estimated that here are upward of 4000 miles of railway now building or planned which, while not to be wholly dependent upon ore traffic, would never have been undertaken were it not for successful mine development; and that the total expenditure for railways and smelters will approach, if not exceed, \$200,000,000. When the proportion of total ore values that may be credited to transportation and reduction is considered, these figures indicate a stupendous anticipated increase in metal output and a very long period of production, assured beyond doubt in the minds of those who are supplying the capital.

All this spells prosperity unprecedented for the West, and particularly for the regions tributary to Los Angeles. Demand for the metals—gold, silver, copper, and lead—is growing year by year. Supply, for our time at least, is limited not as to ore occurrences, but by lack of transportation facilities, which, answering to demand, are broadening the sure foundation upon which must rest the material progress of this western country.

## GREENWATER COPPER.

8-11-06

### Strong Company Acquires Inyo County Property. Adjoins Furnace Creek Copper Company.

The Tonopah Miner is authority for the statement that the Greenwater and Death Valley Copper Company has been incorporated under the laws of South Dakota, with a capitalization of 3,000,000 shares of a par value of \$1 each, of which 1,000,000 shares have been placed in the treasury for development purposes. The officers and directors are Frank A. Keith, president; Donald B. Gillies, vice-president; Chas. E. Knox, treasurer; W. L. Carden, secretary; Malcolm L. Macdonald, J. Ross Clark, Chris. Zabriskie and Dr. M. R. Ward. The Tonopah Banking Corporation is registrar.

The property of the company is situated at the south end of the Furnace Range, in the Greenwater Mining District, Inyo county, California, and consists of eighteen claims in one group. The claims are known as the Kuna group and comprise the original locations. They lie in the heart of the district. Donald B. Gillies recently inspected the property and was very favorably impressed by the showing. The surface indications and the development work to date justify the prediction that the claims will develop into a large producer of copper.

The new company will begin active development work at once. A gas-line hoist will be installed and the shaft sunk as rapidly as possible to the 500-foot level. This new organization, in conjunction with the Furnace Creek Copper Company (organized by Patsy Clark,) which owns the adjoining property, insures a thorough development of the entire Greenwater district.

8-11-06 (8)

AUG 11



Aug 25 1906

Vol. XX, No. 8

LOS ANGELES, AUGUST 25, 1906.

## GREENWATER COPPER DISTRICT

**Rich Ores in Inyo County. Development Active. Railroad Will Pass Near By. Water Development Planned.**

**G**REENWATER, in the Funeral Range of Inyo county, California, is at present one of the chief attractions for operators from Nevada and California. A mining engineer, who has recently examined a property there, called at the office of the Mining Review this week and stated that the showing, considering the amount of work accomplished, is a remarkable one.

The Furnace Creek Copper Company, of which "Patsy" Clark, the millionaire operator of Spokane, Washington, is the chief in interest, has now reached a depth of 230 feet. The main shaft has been sunk vertically in a vein about 300 feet wide between hills. The foot wall was encountered

at a depth of 185 feet. From the 250-foot station a crosscut will be run to open the vein.

While passing through this vein, the shaft cut through three ore bodies, one of which was about thirty feet wide and the ores of which are said to carry very high average copper values, while the two smaller ore bodies, about five feet wide each, are if anything richer.

The Greenwater and Death Valley Copper Company, of which Mr. Donald B. Gillies is the active head, is near the Clark property. Major J. W. A. Off, of Los Angeles, who has just returned from Greenwater, reports that the shaft in this property is now seventy feet deep and all in ore of

high grade. There are sixteen claims and several fractions in the group, through which five well defined veins pass, having the same strike as the Furnace Creek veins and showing on the surface from fifteen to forty feet wide.

Mr. P. Augustus Heinze, of Butte, Montana, is opening a property half a mile south of the Greenwater and Death Valley, and on the same strike.

The shaft is reported to have reached a point seventy-five feet deep, whence drifting is being carried in high-grade carbonate ore.

South of the Heinze property, and half a-mile distant, Major Off has bonded for his company fifteen claims on which are excellent surface showings. The Off-McGarvin-Brown Com-

pany will begin development of this ground next week. The gossan has been stripped in several places showing high-grade carbonate ores beneath. Concerning the Greenwater district Major Off said:

"The veins are many and parallel, as indicated by the long croppings of gossan which, on the four leading groups at least, is seamed with copper carbonates. The gossan is, however, but a shallow capping; and wherever broken through on the veins mentioned, rich copper ores have been revealed. In the principal exposures, these are reliably reported to run from 10 to 30 per cent. copper. I was chiefly concerned with the Clark, Gillies, and Heinze properties, and

with our own, which is an extension of these three. There are, however, very many parallel systems with prominent croppings, and if these prove to be of anything like the same value, one of the most important copper districts of the West will, I believe, be developed there. If, in the 250 foot crosscut in the Clark property, the ore body is found to be of the same size and grade as it was when

the shaft cut through it, the district will, I think, be fairly assured of a great future.

"The present difficulty is chiefly with the water supply. There have been reports that water is to be piped



7-25-06 (4)

THE NEW CAMP OF GREENWATER, IN THE FUNERAL RANGE, INYO COUNTY, CALIFORNIA



AUG 11 1906

AUG. 11, 06

# Los Angeles Mining Review

## NEWS OF AURORA MINES

### California Exploration Company Makes Strike. Electric Power Plant Started. Virginia and Truckee Railroad Seeking Outlet to Los Angeles

**A**RICH STRIKE is reported to have been made in the Eva mine of the California Exploration Company, a Los Angeles corporation operating at the old camp of Aurora, in Esmeralda county, Nevada.

This mine which was bought by the company last Winter from the estate of Governor H. G. Blasdel, has been under renewed development for some months. The strike is in a shaft now being sunk to connect with the old workings. The ore, specimens of which have been received here, is quartz with heavy sulphurets and free gold, and is said to run into high values. The Eva is the north extension of the famous Prospectus mine

of the Cain Consolidated Company, in which sensational ore has been discovered recently.

Other development, now being carried on by the California Exploration Company, is in the Ophir shaft which is 100 feet deep and has been cleaned out to the 50-foot level, which will be further explored. The old workings of this mine are, however, full of bad air and ventilating machinery will be installed to facilitate progress. The Ophir has yielded large amounts of bullion in early days and the company expects to find very considerable bodies of ore still standing that will pay by modern methods.

A tunnel has been started to explore for the supposed blind ledge in Table Mountain. This Mountain, as reported some months ago in the Mining Review, has yielded an extraordinary amount of rich float, the source of which has never been discovered though John W. Mackay and his associates for years kept posted at Aurora a reward of \$5,000 to any man who should find it. It is believed that the crosscut tunnel, which the com-

pany is now driving, will open a high-grade vein of importance.

The Cain Consolidated mill is running steadily on ore supplied by leasers. It is believed that the saving, by amalgamation and cyaniding, will be from 90 to 95 per cent., though no figures have yet been tabulated.

Messrs. Loose Brothers, of Salt Lake City, have started construction of a hydroelectric power plant to supply Bodie, Aurora and other camps with power. It is stated that 50,000-horsepower can be generated at this plant which is on the east fork of the Walker River—also that the agreed cost of power to mining companies, that have already subscribed, is \$60

per horsepower year. This will be a most important saving, as fuel-generated power now costs three times that amount.

It is learned from very reliable sources, which cannot be named, that Mr. E. B. Yerrington, secretary of the Virginia and Truckee Railway Company, stated recently that his company is now seeking a practicable grade from the Mono Valley, south of Aurora into the Owens River Valley, with the object of building south to Owens Lake and thence to Los Angeles; and upon success of the company's engineers in finding such a route will depend the fate of this project. The Mining Review's informant who is a mining engineer of prominence, has frequently crossed the divide between the two valleys and states that there are no engineering difficulties of consequence.

The report that the Gould interest has bought the Virginia and Truckee is denied, though it is believed by those well informed that an understanding exists between Mr. D. O. Mills and the Western Pacific. Between Mr. Mills

and the Southern Pacific there is understood to be little sympathy, the larger company having diverted all possible freight to its own line running south from Reno to Keeler, Inyo county. Mr. Mills is therefore peculiarly anxious for a coast outlet, and is not averse to paralleling the Southern Pacific line down the Owens River Valley, whence a perfect grade may be followed into Southern California. Such a line would open a wonderfully rich mining section to Los Angeles trade, and would have a transcontinental connection in the Western Pacific which will cross the Virginia and Truckee tracks north of Carson, Nevada.

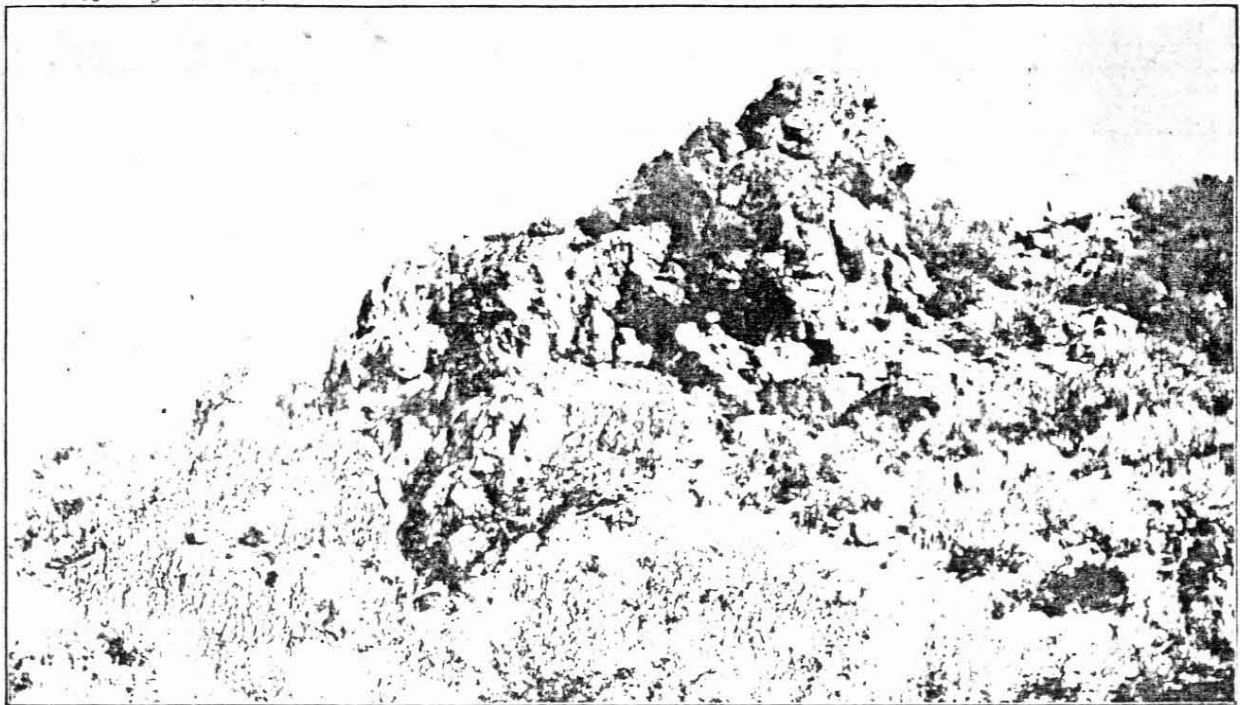
It is stated by the same authority that the recent extension of Mr. Mill's road south from Carson to Minden would seem quite unjustified by any possible local traffic, as would likewise be any further extension south

unless the road is to be built through—since ores of that region, including Aurora and Bodie, are such as can be treated locally, and one way freight traffic alone could be looked for. A through line would bring Los Angeles closer to those camps by many miles than is any other industrial center.

AUG 11 1906

## Los Angeles Mining Review

AUG 11, 06 (8)



BOLD CROPPING OF EVA LEDGE AT AURORA, NEVADA, NEAR THE RECENT STRIKE.

AUG 25

### PICACHO DISTRICT, CALIFORNIA

**Eastern Portion of San Diego County Rich in Gold.  
Interesting Geological Features. Has  
Produced Much Bullion**

(WRITTEN FOR THE MINING REVIEW BY PROFESSOR E. M. SKEATS)

**A** IN EVERY great mining excitement, there were thousands of the early argonauts to this coast, who were disappointed. There could not be a mine for every one—yet of the many who failed at

7-25-06 (6)

first, a proportion, rather than return home, sought further afield.

And so, in the early fifties prospectors—who had by that time learned to know the "ear-marks" of gold—had followed down the Sierras and reached

the end of them, and the Colorado River.

Here success awaited many, and for a time the neighborhood, now known as the Old Picacho Mining District, was alive, and gold was taken out of the gulches and bars to the extent of several million dollars.

After the cream was taken, or thought to be taken, the prospectors moved on, and left the "pickings" to the few Mexicans who were native of the soil and made their livelihood with the battea and the dry wash.

Of veins there was little thought for only one vein was worked. Some time in the sixties David Neaha in a stamp mill, hauled his ore miles and made about \$30,000 a month, until he was attacked by Apache Indians, and the business lost its charm. The ore that Neaha was

AUG 25

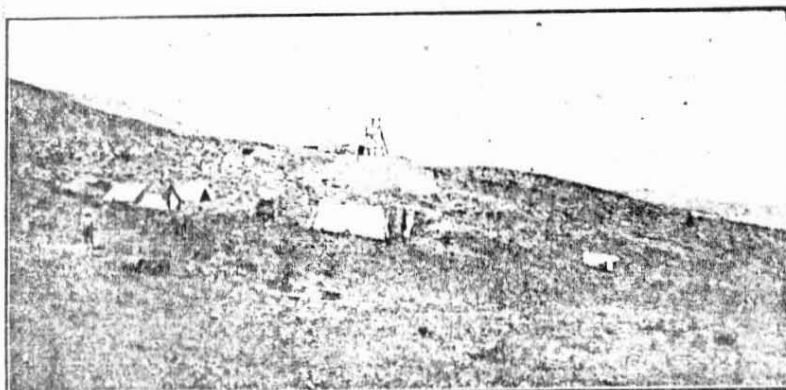
8-25-06 (4)



IRON GOSSAN ON THE MAIN VEIN OF THE GREENWATER FURNACE CREEK COPPER COMPANY'S PROPERTY AT GREENWATER

AUG 25

State. Deep wells will be bored at this new district will inevitably come several favorable points, however, and to Los Angeles, and there is very



SHAFT OF THE FURNACE CREEK COPPER COMPANY

there is no reasonable doubt that an adequate supply can be developed. good promise that it will be an important trade.

"The Tonopah and Tidewater Railroad grade passes within sixteen miles of Greenwater and, if sufficient ton- sum in the effort to develop water

district. Silver-lead ore of high grade can be secured within forty miles on the Tonopah and Tidewater Railroad.

"The district is, of course, by no means proven as yet; but very strong people are vigorously developing veins that are remarkable for the quantity and grade of the ores exposed so far, and the formation is such as to give confidence in their depth. Our own property will be operated as rapidly as possible, and under the supervision of a competent engineer."

AUG 25 1906

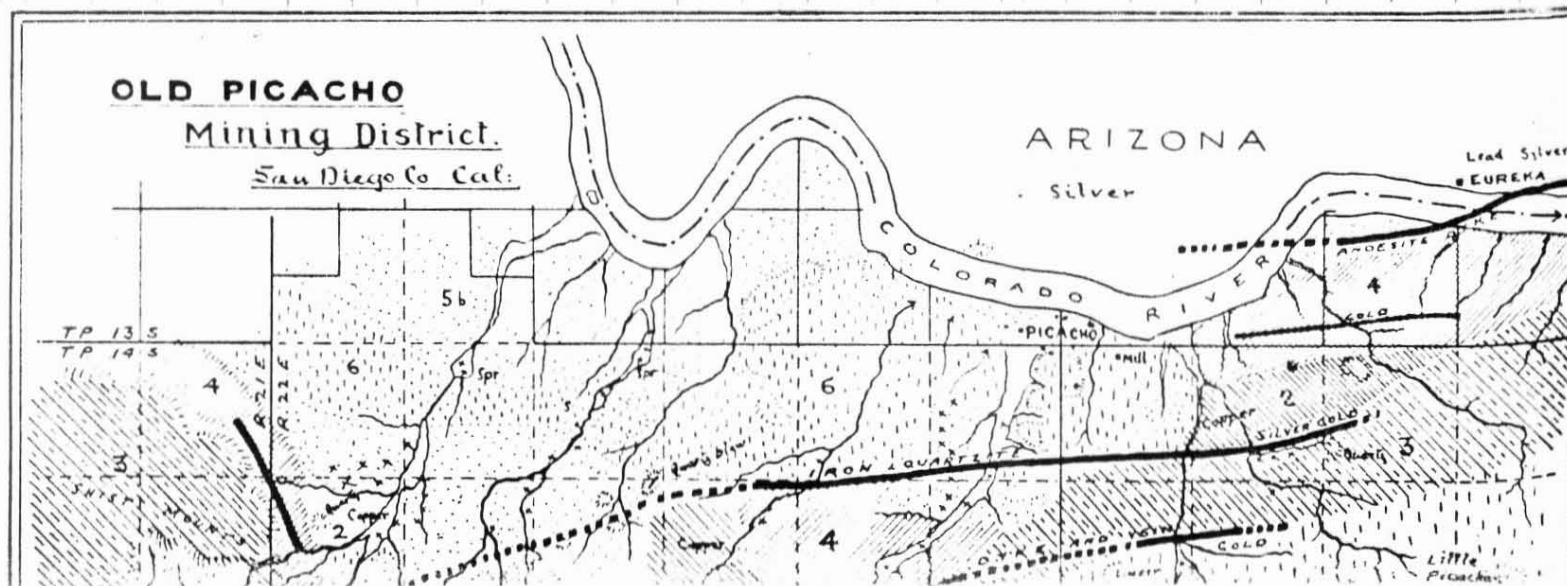
**Jos Angeles Morning Brewen**

AUG 25 1906



CALIFORNIA KING GOLD MINES MILL, ON THE COLORADO RIVER, CALIFORNIA

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AUG 25 1906

AUG. 25 06 (7)

## Los Angeles Mining Review

ed came from the original claims that were afterward bought by the California Gold King Company.

This company, which now owns twenty-seven patented claims, built a thousand-ton cyanide plant at Picacho—on the banks of the river, and constructed a railway from the mill to the mines. A successful run was made for

vein matter, a clean iron quartz with free gold—occurring in the contact of a granite shist and a hydrous porphyry. This contact and conditions extend for several miles and the extensions are being now looked into. This vein, huge as it is, is only one of several in the district.

A reference to the accompanying

as Arizona furnishes, there good mineral veins should be.

This country is made up of the shists and slates of the Jura Trias period. These were at one time covered over with a thick layer of conglomerate of more recent date.

An uplift of several hundred feet occurred after the deposition of these sediments, and subsequent denudation has bared the original strata in parts, has covered areas with new siftings of these sediments and left a few high peaks standing, capped with the conglomerate as monuments to show the vastness of nature's work.

Besides this main uplift and the denudation and re-deposition of sediment, the geology of the country is further complicated and hidden by extensive flows of lava, frequent intrusions of trachyte and dolerite and great masses of porphyry which it is hard to classify, or even to determine whether they occurred as top flows only, or whether they came up from great depths.

The veins as a rule, follow the contacts of the older rocks, and it is probable that some of the best are buried beneath the gravel and conglomerate hills. Mineral is generally to be found on or near the contact of the porphyries and the shists or slates; but there are some veins, fairly well defined and rich in gold, in the slates themselves.

The low hills of the district are generally formed of gravels—debris from the older rocks, the porphyries and the veins. These carry gold in small quantity; and in places—remains of old channels—the gravels are very rich, but cemented so that Mexicans with dry washers cannot make them pay.

As a rule, these gravel banks, the remains of old drainage courses, follow more or less the same course as the present gulches, but are always on a higher level.

The map indicates the chief points where placering to any extent has been done. It will be seen that all the areas are either over a vein or in gulches below where these cut the veins. Some of the gold comes from the hills which are made up of debris, but much is undoubtedly coming from the veins direct today.

This almost forgotten corner of California is tributary to Los Angeles, and should be looked into by Los Angeles capitalists. It bids fair to rival any mining district this city has interest in.

some time, but two years ago a cloud-burst swept away the railway and generally demoralized the works. The company is now reorganized and is expected to start up work again this winter on a larger scale than heretofore.

Near the King company's ground the California Queen Gold Mines Company owns mine claims. These the company has been developing for four years, and has now extensively opened a rich vein. Shafts and drifts are open to two hundred feet and there is now exposed a vein about 45 feet wide and nearly two miles long with an average value of at least \$7.00 to the ton; and ore as high as \$46 a ton at the lower depths.

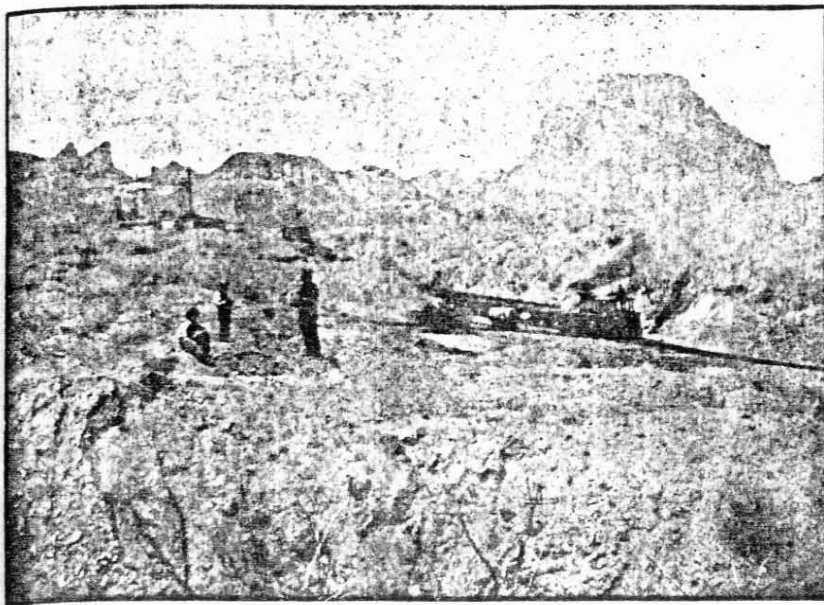
Both these companies have their claims in what is known as the Picacho Basin on the line of the main anticline or uplift of the country—the

map will show that the country is intersected by long dykes. These dykes are of trachyte, dolerite and andesite. They follow generally the contacts of the varying strata of shists and slate. They are accompanied by, and sometimes merge into, quartzite, and are always largely impregnated with iron. In some cases the dykes themselves carry gold but oftener there are iron veins alongside, which veins carry the precious metal. Hardly any work has been done on these large veins and the district is practically open to capitalists who will venture a few thousand dollars on pioneer work.

The writer has spent the past year in this corner of California, lured there by the belief that it should have, hidden somewhere, some of the richest veins of the country. Where a highly metamorphosed range like the Sierra Nevada meets such porphyries

AUG 25

8-25-06 (11)



VIEW OF THE PROPERTY AT PICACHO, CALIFORNIA, OF THE CALIFORNIA KING GOLD MINE.

SEP 15 1906

# OFFICIAL MAPS

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ROUND MOUNTAIN  
GOLDFIELD, TONOPAH  
BULLFROG MINING  
DISTRICTS**

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## NEW MAP

A new map, corrected up to date, is the "PROSPECTOR'S MAP OF TONOPAH, GOLDFIELD, KAWICH, LIDA, TOKOP, BULLFROG AND PANAMINT MINING DISTRICTS."

It shows towns, roads, trails and watering places in Southern Nevada and in the Death Valley Region of California.

It was compiled by F. S. Pheby, M. E., Consulting Mining Engineer, Goldfield, Nevada, and printed by Rand McNally Company of Chicago, in colors. Folded in cover to pocket size. PRICE 75 CENTS.

For Sale by MINING REVIEW, 120 No. Broadway, Los Angeles.

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Mr. James Noonan, formerly superintendent of the Arlington Gold Mine indicate, California, has gone to Lower California, Mexico.

Mr. Alfred Fox, General Manager of the Calloyma Silver Mining Company limited, Peru, is in London.

## Obituary.

The death at El Paso, Texas, of Mr. S. Austin is announced. Mr. Austin was one of the best known smelting men in this country; at the time his death he was superintendent of the Southern Department of the American Smelting and Refining Company.

Count Sergius Mentschikoff, well known among Arizona mining men, died recently at Providence, R. I. He survived by a wife and two sons to reside in Prescott.

## MAP OF SEARCHLIGHT.

Mr. M. L. Cook, County Surveyor San Bernardino county, California, United States Deputy Mineral Surveyor for California and Nevada, has compiled and published a map showing the mining claims of Searchlight District, State of Nevada. The map is 36 inches by 18 inches in dimensions, on a scale of one inch to a foot. So many mining claims have been located in this district, their respective positions being shown, that this map will be in great demand. The price of it is \$2, and it can be procured at the office of the Mining Review, 120 No. Broadway, Los Angeles. The Mining Review (published every Saturday) will be mailed for one cent together with this map on receipt of \$2.

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The Miner prints all the news from all the districts in the Great Goldfields

The Tonopah Miner, Tonopah, Nevada

SEP 15

SEP 22 1906

6

SEPT. 22, 06

## Los Angeles Mining Review

### FURNACE CREEK COPPER

**Extraordinary Showing in Inyo County Mine. Shares Rising Rapidly. Mine Regarded with Much Interest**

**N**O COPPER DISTRICT has, so early in its history, attracted such widespread and interested attention as the Greenwater district of Inyo county, California. And equally no mine, with a like amount of development, has ever been watched so eagerly by investors as the Furnace Creek Copper mine.

The list of prominent operators identified, and for large sums, with the Greenwater district is now a notable

run from the 250-foot level reveals such ore-bodies as are indicated above, the tonnage developed will be sensational as to quantity and value.

This property has been examined by several competent and leading engineers. The following, from the report of Mr. J. M. Porter of Spokane, Washington, is of interest:

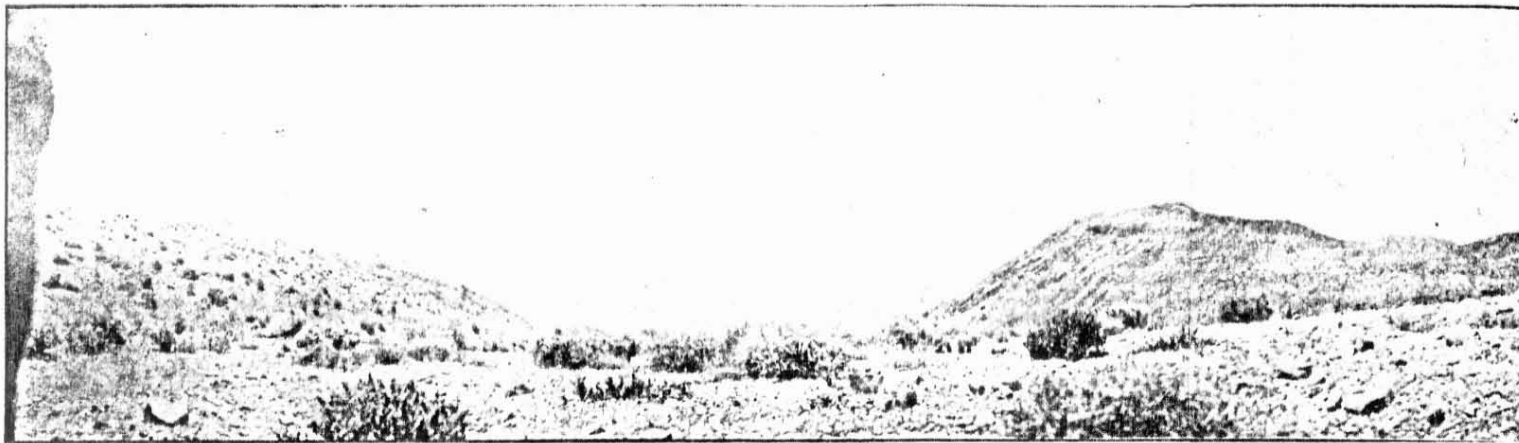
"This is a fissure vein in porphyry and granite, the southwesterly part of the group extending into granite

Mr. E. M. Geppert of New York, reporting subsequently, says:

"The property is located about the centre of a mineralized belt of acidic porphyry. The exposed area of this porphyry is ten square miles, extending from near Greenwater on the southeast for a distance of seven or eight miles in a northwesterly direction. Within this area it forms the northeast flank of the range separating Furnace Creek from Death Valley and the upper portion also of the opposite flank. On the northwest and southeast, sediments cover the flow. To the northeast the wash in Furnace Creek overlies it, and to the southwest it apparently dips under a more basic igneous rock of coarsely crystalline texture. This porphyritic area is traversed by a series of what may be termed min-

will be encountered, but I should expect it, on account of the extreme arid condition, to be somewhat deeper than in other mines of the Southwest where sulphides are met with at a depth of 100 to 300 feet."

The Copper Blue shaft is now 250 feet deep, and has cut through four parallel bodies of high grade carbonate ore, ranging from two to thirty feet wide, and with copper glance showing in the lowest. Values in these four ore bodies range, according to reliable reports, from 10 to 35 per cent. Between them is lower grade ore. The shaft, which is vertical, entered the foot-wall at 185 feet but has cut a four foot ore body in the foot wall country rock. A cross-



DEATH VALLEY, INYO COUNTY, CALIFORNIA

one, including Messrs. Patrick Clark of Spokane; John W. Gates, Charles M. Schwab, F. Augustus Heinze, Donald B. Gillies, Malcolm MacDonald and others.

These men, of themselves, would cause investors to watch closely any

from the porphyry, the formation in which is the greater part of the group. That there has been a great deal of movement is shown by the amount of 'slicken-sides' found; and the consequent shattering of the rocks, form the

eralized zones with a general northeast and southwest strike. The distance between these zones has not yet been determined. The mineralized zone in the Furnace Creek Copper property consists of a series of paral-

cut is being run to the vein from the 250-foot station. All development, so far, indicates that a very large high grade tonnage will be exposed above the 250 foot level, while the promise for large sulphide ore-bodies at greater depth is unusually good.

SEP 22

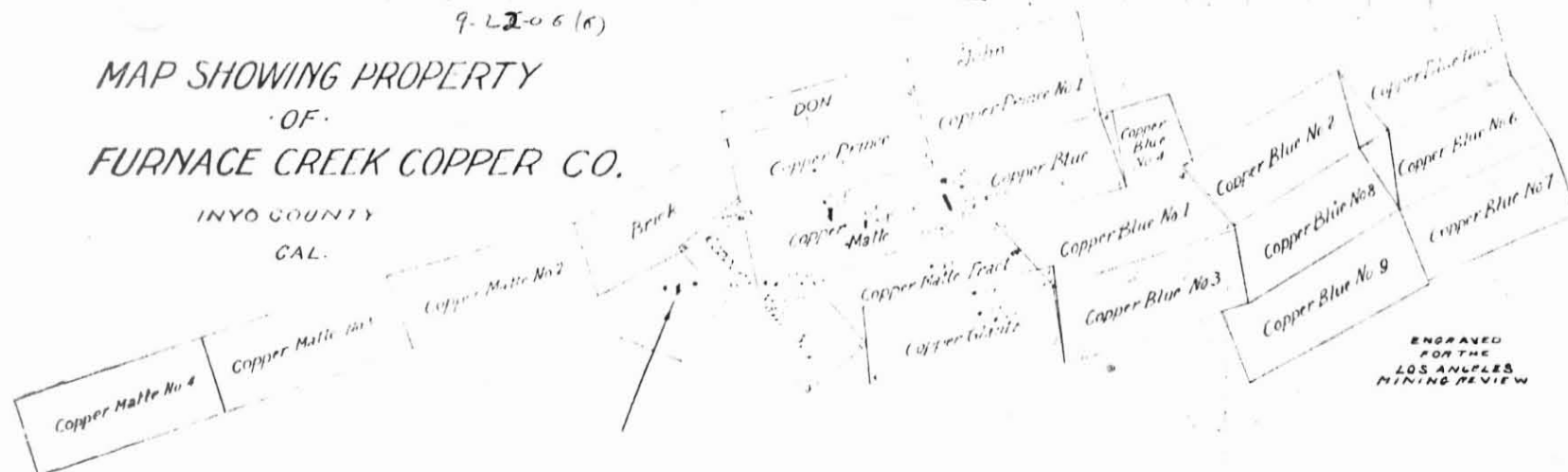


SEP 22 1906

9-22-06 (8)

# MAP SHOWING PROPERTY OF FURNACE CREEK COPPER CO.

INYO COUNTY  
CAL.



SEP 22 1

enterprise, of whatever nature, in which they might choose to engage. When the enterprise is copper mining at this time when copper is in all men's minds, and when the report of engineer after engineer confirms those that have preceded as to the very unusual promise of the mines. It is not surprising that in every financial center of the country Furnace Creek copper is known, nor that much is expected of it.

Sixty-five thousand shares of this company, of which Patrick Clark is president, have been taken by Los Angeles investors. The stock, at the time of going to press, was quoted in New York at \$4.12½. Los Angeles people have, therefore, gained handsomely already on the investment, and there is reason to expect a greater advance. If the crosscut now being

proper conditions for the deposition of immense ore bodies.

"The cuts and other working have exposed this vein for a length of nine hundred feet along the vein, and fifteen hundred feet in width. While it is the opinion of some that there are four veins, I am of the opinion that it is all one vein, though of course, some parts are much richer than others. This opinion is borne out by the fact that recent work on the surface, building a wagon road for the purpose of hauling machinery to the Copper Blue shaft—exposed the vein continuously for a distance of three hundred feet or more in width, without exposing either wall. It is certainly a mountain of ore and one of the most wonderful veins in the country.

"I feel that I can say, without fear of contradiction, that not one of the great copper mines of the United States had as good a showing with the same amount of development as this property."

led veins more or less well defined. On a line at right angles to the strike, near the Copper Blue shaft, the porphyry is mineralized for a distance of seven or eight hundred feet. A little more work may prove this to be considerably wider. Along the strike, the zone may be traced for three thousand feet. At the southwest end it is much narrower, probably, not more than twenty-five feet."

Mr. F. A. Provot of New York, after a discussion of the geology, concludes:

"The district in which the holdings of the Furnace Creek Copper Company are located is one of great promise and its property I consider a very valuable prospect. The size and character of its croppings compare favorably with several of the large copper mines of Arizona and it is my opinion that a very large and profitable deposit will be found with depth. I can hardly venture a statement as to what depth sulphide ore

The Copper Matte shaft, 600 feet southwest of the Copper Blue, is now eighty-five feet deep and with fourteen feet of 10 per cent. ore showing at the bottom in a short crosscut. A Fairbanks, Morse hoist has been ordered for this shaft. It will be sunk as rapidly as possible, and from the 250-foot level a drift will be run to connect with the Copper Blue workings.

The Greenwater and Death Valley Copper Company, in which Messrs. Charles M. Schwab, Donald B. Gillies and Malcolm MacDonald are the most prominent shareholders, has also a very valuable property which is being rapidly developed. The ore chute, though not so wide as that of the Furnace Creek Copper, is exposed for a greater length by surface workings. These shafts are now down from fifty

9-22-06 (7)

SEP 22

eighty feet and expose a strong vein of high grade ore.

The Heinze property, now being opened, is also a most promising prospect for a big mine, as is the Off group nearby.

The district, which in a remarkable manner is justifying its surface prom-

ise, is closely tributary to Los Angeles and is already drawing from here all necessary supplies and mining machinery. In the opinion of competent engineers, it promises to become a second Butte. Its development, therefore, is of the first importance to all interests in this city.



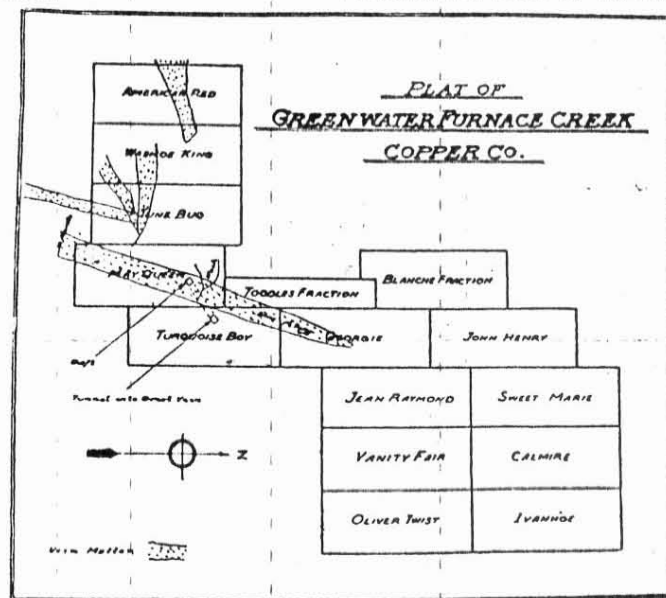
## SEP 29

SEP 20

9-29-08 (5)

The Greenwater and Furnace Creek Copper Company owns outright fifteen claims and ten fractions, including the May Queen, about one-half mile south of F. Augustus Helnze's property, which is now being successfully developed. The distinctive feature

the granites and porphyries. On the Death Valley side the tremendous erosion has removed the former and exposed the latter to the floor of the



"The matrix is calcite, some silica and iron; and unless unlooked-for changes occur in depth, the ore should prove to be a good smelting proposition. Depth ought to show bodies of unaltered ore in the form of the various sulphides of copper."

The Greenwater and Furnace Creek Copper Company has paid, in cash and stock, \$100,000 for this property and owns it unincumbered. It is reliably stated that the company has 500,000 shares, or one-third of the capital stock, in the treasury besides \$50,000 cash subscribed by the officers and directors who, headed by Mr. A.

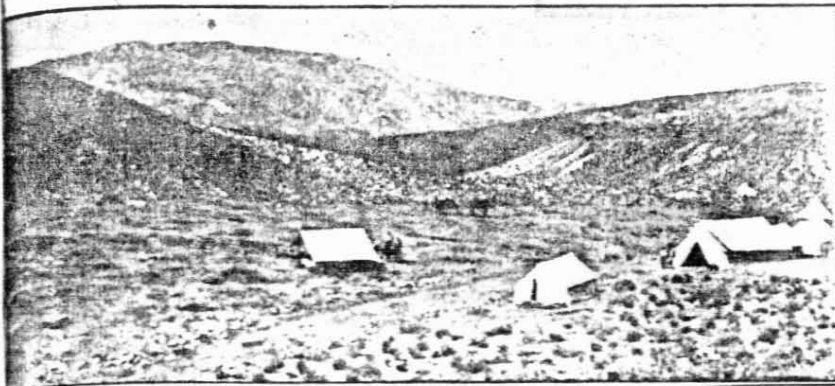
SEP 29 1906

## THE SKIDOO MINE AT EMIGRANT

**Famous Property to be Heavily Equipped. Will Have Two Mills of Fifty Stamps Each Great Ore Bodies**

**I**F EXPECTATIONS of its owners are realized—and they appear to be well founded—what is known as the Thompson and Ramsey property at Emigrant Springs, soon will be made one of the best paying propositions in the Wild Rose district, Inyo County, Cal. The property, which consists of twenty-six claims, covering a two-mile surface ledge of from five to fifteen feet in width, is owned by Councilman

it decided the owners to hurry forward improvements and to begin mining upon a large scale as soon as possible. A large crew of graders was set to work, grading for a pipe line from Telescope Peak to the property, a distance of twenty-two miles. This grading now has been completed, and the work of laying the pipe is under way. The conduit, when completed, will have a capacity of 32 miner's inches of water, and is expected to de-



AT THE SKIDOO, ROBERT MONTGOMERY'S MINE AT EMIGRANT, INYO COUNTY, CAL.

George A. Smith of Los Angeles, Robert Montgomery, formerly owner of the Montgomery-Shoshone mine, at Bullfrog, which he sold to Charles M. Schwab for \$5,000,000, and Matt Hoveck, formerly Montgomery's mine superintendent at the Shoshone, and who refused similar employment under Schwab to devote his time to his own interests. These three men own the mine outright, and no part of them is for sale. They have not incorporated but will operate the mine on a partnership basis.

Already considerable exploration and development work has been done. Recently 417 samples, taken at intervals along its length of two miles, gave a reported average value of \$82 to the ton. This was more than had been expected and

develop 75,000-horsepower at the upper end of the property. The fall between the points is 1,200 feet.

Within sixty days work will begin here upon a fifty stamp mill, to be operated by this water power. Later a second mill will be installed at the lower end of the property, and will be operated by the same water, after it has done its work above. The fall between the first and second mill will be 1,000 feet; and the second mill, also, will consist of fifty stamps.

Grading for the foundation of the first mill has been completed. Contracts for the building and for the machinery have not been let as yet, but will be shortly.

Shafts have been sunk to short depths in numerous places along the ledge, and sinking now is in progress. One of these shafts is down sixty feet

and the ore being taken from it is of shipping grade and is being sacked.

The pay rock is quartz. Samples now in the possession of Mr. Smith, in Los Angeles, show considerable free gold, the precious metal being visible to the naked eye.

The camp will be named Montgomery, and application already has been made to Washington for a postoffice with daily deliveries. The strike has created much excitement in the district and claims are being taken up rapidly. The known mineral belt is six miles wide, by ten in length.

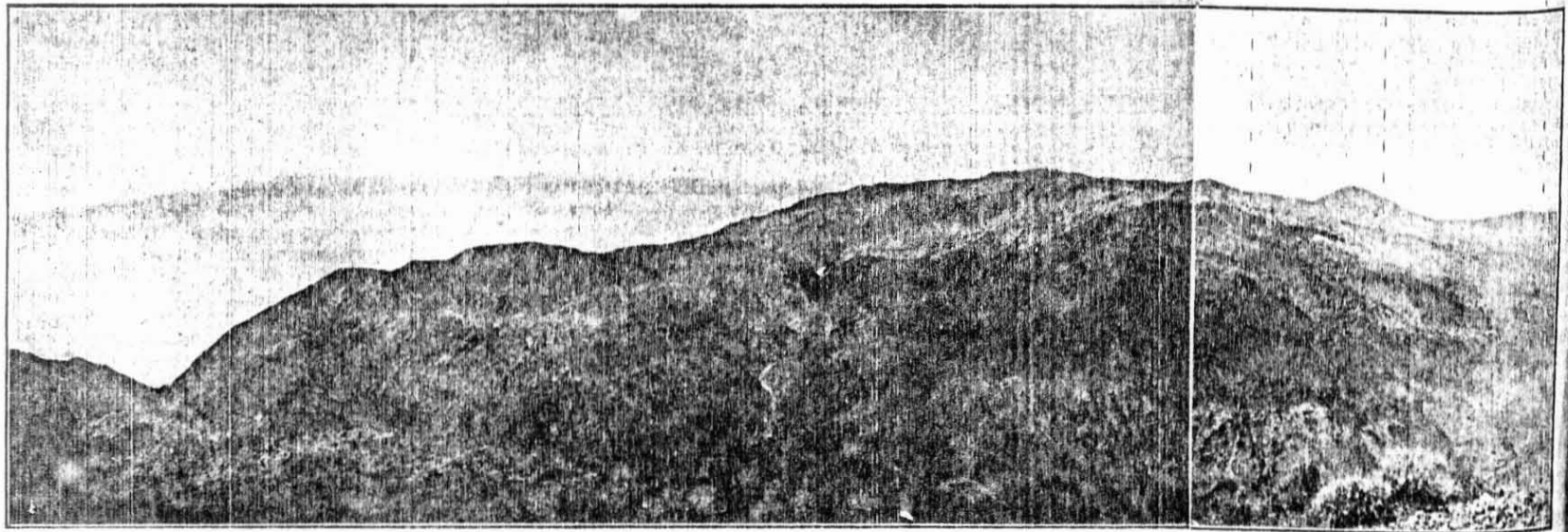
The district is an interesting one geologically, the country rocks being schist, limestone, quartzite, granite, andesite and rhyolite. The veins occur in fissures and contacts.

The camp is reached from Johannesburg, through Ballarat and Wild Rose canyon; and from the other side of the Panamint range, by way of Ash Meadows, Nevada. The former, however, is the probable mail route.

"Bob" Montgomery, one of the owners, is quoted as saying that these claims, known locally as the "Skidoo," will exceed the Montgomery-Shoshone in richness. There is said to be enough ore in sight already to run 150 stamps, ten years; and with the water power assured, the owners expect to treat \$4 ore at a profit.

SEP 29

SEP 29 1906



THE MAY QUEEN GROUP OF THE GREENWATER AND FURNACE COPPER COMPANY

SEP 29, 06 (K)

SEP 29 1906

7

## Los Angeles Mining Review

9-29-06(7)

H. Busch of Los Angeles as president are the following: United States Congressman James McLachlan, vice president; Mr. S. B. Cannell, of the Cannell Publishing Company, secretary and treasurer; United States Senator George S. Nixon of Nevada; Mr. I. H. Clark, one of Nevada's most prominent mining operators; Mr. H. Woollacott, until recently president of the State Bank and Trust Company of Los Angeles, and Mr. Wm. Bayly of the well known mining firm of Posey and Bayly, Los Angeles. Mr. A. J. Messer is superintendent and Mr. H. R. Bacon is consulting engineer.

Development work has been started on the main vein of the property which traverses the May Queen and adjoining claims diagonally for a length of 3500 feet and with a surface showing averaging over 200 feet wide. At the highest point and where the iron capping is at its greatest width a double compartment vertical shaft has been started and will be sunk with two shifts. Down the mountain side an adit tunnel has also

been started, which will be driven to connect with the shaft at 350 feet depth. At both points, and continuously between, the indications are reported as being excellent for a very wide high-grade ore body.

This company will, on January 1 next, be listed on the Los Angeles Stock Exchange, the San Francisco Stock and Exchange Board and the Goldfield Mining Stock Exchange.

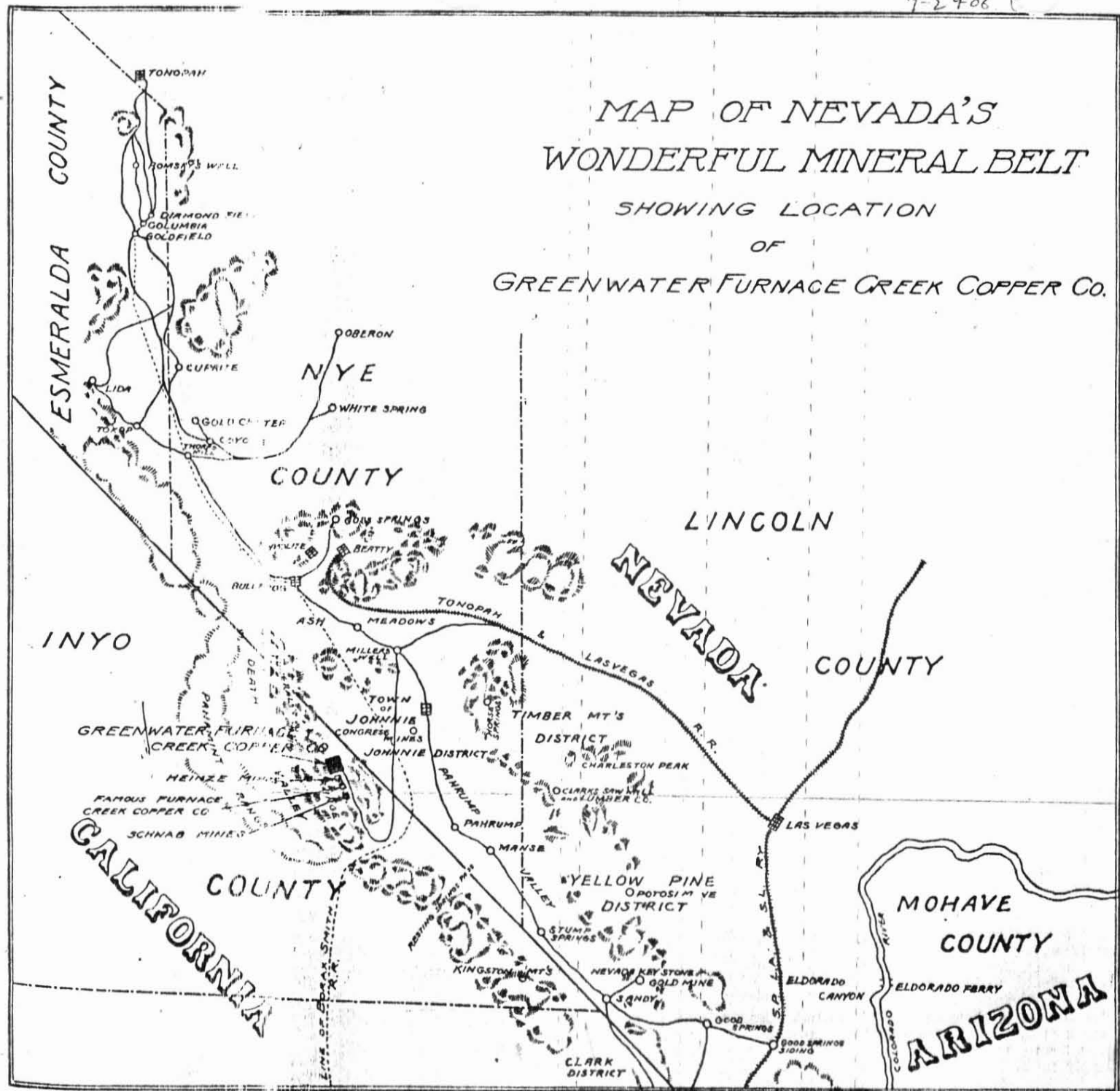
It is stated that \$15,000,000 have already been invested in Greenwater properties. Whether or not this be true, it is certain that an extraordinary list of heavy capitalists are represented in the district, among whom Mr. J. R. Brock of Philadelphia, president of the Tonopah Railroad and of the Tonopah Mining Company, is one of the latest. He is reported to have offered \$250,000 for 250,000 shares of the Greenwater and Death Valley consolidated, of which Messrs Schwab, Miles and Macdonald are the leading shareholders. He was allotted 50,000 shares at \$1. The stock has since gone up to \$1.80.

For almost every heavy capitalist who has become interested in Greenwater, an engineer has been sent to investigate—and it is justly considered remarkable that among so many there has been heard no doubtful endorsement of the promise shown by surface indications, the geological conditions and by development so far as it has gone. It is probable that no western mining district has ever, so early in its history, been backed by such strong and abundant capital as is Greenwater today. If the ores continue down in anything like their surface value and volume as, so far as can be learned, every competent engineer who has examined them believes they will, Greenwater will become one of the World's great copper camps and will add many names to the list of copper millionaires. To merchants, manufacturers and all interests of Los Angeles, the district and its wealth producing possibilities are of peculiar importance—for this winter it will be but a few hours distant by the new Tonopah and Tidewater Railway.



7-2906

MAP OF NEVADA'S  
WONDERFUL MINERAL BELT  
SHOWING LOCATION  
OF  
GREENWATER FURNACE CREEK COPPER CO.



Los Angeles Mining Review

SEP 29 1906

10-6-06 (6)

OCT 6 1906

## Los Angeles Mining Review

## FURNACE CREEK COPPER MERGER

**Consolidation of Big Interests Planned. Smelter and Railroad to be Built. Great Speculative Movement On**

**T**HE REPORT current this week that a consolidation of the Furnace Creek Copper Company and the Greenwater and Death Valley Company is seriously contemplated by the Clark and Schwab interests, is reliably confirmed to the Mining Review. Unless unforeseen complications arise in the arrangement of details, it is believed that official announcement of the merger will be made very shortly.

The important features of the plan are the smelter to be established on the Amargosa River and the railroad from Greenwater to the Las Vegas and Tonopah railway, connecting also with the Tonopah and Tidewater. This

would at once give the smelting plant a great ore territory to draw from in Nevada, Southern California and Arizona over the Salt Lake and Santa Fe systems, thus insuring low smelting costs. Such an establishment

would be of vast importance to the Southwest.

It is believed that the new corporation, if formed, will necessarily be capitalized heavily. Furnace Creek Copper is now selling at about \$5, which with 1,250,000 shares, means about \$6,250,000 for the mine. Greenwater Death Valley is capitalized at \$3,000,000 but it is understood that not over 500,000 shares have been sold. Just on what basis the consolidation will be made is not known, but the two properties will probably represent not far from \$15,000,000 of the new stock issue. The smelter, railroad and working capital will certainly

bring up requirements heavily, so that a \$25,000,000 or even a \$30,000,000 company would not be surprising.

It is understood that new interests will enter into the combination. Messrs. Patrick Clark, John W. Gates, Charles M. Schwab and John R. Brock are alone strong enough to float anything, but H. H. Rogers is supposed to be in the present deal—which perhaps explains why the Heinze property is not, apparently, to be included.

If this merger goes through, it will mean that the Greenwater district of Inyo county will be developed, tested and, if it proves good, equipped with an energy and speed never before at-

tempted in the West, and because present conditions demand it. The ores so far exposed are of such high grade, the quantity is so great for the amount of work accomplished, that



H. H. ROGERS, PRESIDENT OF THE AMALGAMATED COPPER COMPANY

with the copper market as it is, no effort can prudently be spared to bring the mines into production as quickly as possible. Furthermore, with railway and smelter facilities assured,

many other properties in the district will be energetically opened. The project is in every way of the first importance.

It is learned that the Greenwater Furnace Creek Copper Company will be put on the New York curb within the next ten days. Some of the stock has been privately placed here at 25 cents, and the company will be regularly listed on January 1. New York has, however, developed so strong a taste for Greenwater securities that it is considered wise to get into that market, and Major Off leaves here on Monday to see to it. The proper-

ty is well located and has been very favorably reported upon, while the board is a strong one with names that command confidence. As the company is a local one, the course of its shares on the New York market will be watched with much interest.

It is plain that Greenwater securities are to be speculative from now on, and that if deeper development shows the ore bodies to continue without a barren zone, investment will be extraordinarily heavy. The country has been gradually waking up to the possibilities of mining and the present copper market has riveted attention firmly upon that metal. Greenwater "came out" at exactly the right time at catch popular fancy. It is backed by an array of great names to which other great names are constantly being added. If no check occurs, Greenwater stocks will run a remarkable course, and with unusually good prospects of ultimate justification in the shape of very big and very profitable mines.

Latest advices from New York indicate that the Furnace Creek, Death Valley merger plan is well advanced and so far with excellent prospects of a favorable conclusion.



J. AUGUSTUS HEINZE, PRESIDENT OF THE UNITED COPPER COMPANY

OCT 6



COMING OFF SHIFT AT THE FURNACE CREEK COPPER MINE

10-6-6 (6)



GREAT CHOPPING OF THE GREENWATER, FURNACE CREEK VEIN

10-6-6 (6)

OCT 6

OCT 6 1906

Los Angeles Mining Review

OCT 6, 06

15

YOU KNOW WHAT  
YOU KNOW WHAT  
YOU KNOW THAT

**COPPER**

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SHARES ARE DOING  
IS NOW WHAT

STEEL WAS FIVE YEARS AGO AS A MONEY-MAKER

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OCT 13 1906

10

## Los Angeles Mining Review

### PROMISING NEW COPPER DISTRICT

**Successful Development in Southeastern San Bernardino County. High Grade Ores in Wide Veins Exposed**

**B**ETWEEN MONUMENT Peak and Whipple Mountain, in Southeastern San Bernardino county, is a district of which little has been known, but from which have come, from time to time, rumors of valuable copper discoveries.

It is now learned that a copper belt of much promise, extending from Riverside Mountain to five miles north

bonate ores at the surface, with sulphides generally appearing first at 90 to 100 feet, and increasing rapidly with further depth. Several of the veins can be traced for a mile or more, and such development as has been accomplished indicates widths of from ten to fifty feet.

The Sierra Syndicate, of Los Angeles, has for some months been prospecting a vein on the Starlight group near Whipple Mountain. Ten shafts

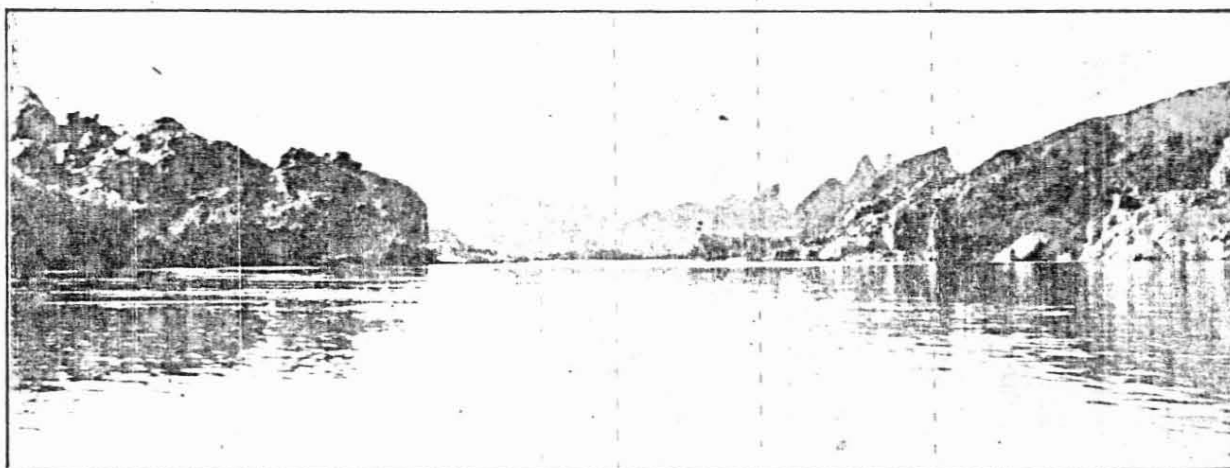
feet wide, and the ore bodies are widening with depth.

Mr. C. A. Bissel, of Los Angeles, is developing a strong, twenty-five foot vein and now has a shaft 200 feet deep, all in ore. He states that values run from 10 to 30 per cent. copper, besides gold and silver, and that the ore is richly character to

sulphides. He is now crosscutting to determine the width of the ore body.

Messrs. Curtis and Drennan, of Los Angeles, have a shaft seventy-five feet deep in a promising vein at Copper Basin. They are also managers of the Copper Basin Mining Company, which has a shaft down sixty-five feet, all in copper ore of high-grade. The vein is exposed for ten feet in width at the surface. This company is also opening the Black Metal mine.

The Arizona and California railroad, now under construction, will pass close to this region, and it is known that the Santa Fe people ex-



THE COLORADO RIVER NEAR THE NEW COPPER DISTRICT

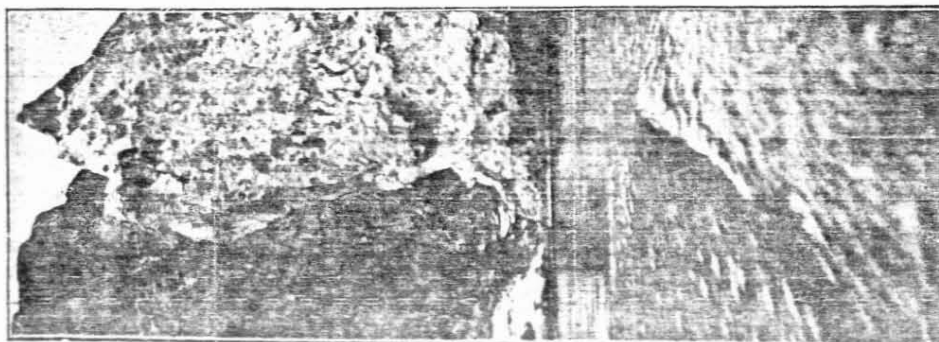
of Monument Peak, and from the Colorado River westward for several miles, is being proven by workings which have reached depths of from 100 to 200 feet.

The country rocks of the district are granite, limestone and porphyry. The veins are said to be exceptionally strong and to carry high grade car-

have been sunk from fifteen to twenty-five feet, and over a length of 7000 feet. All of these show ore. The main shaft is down 100 feet in the vein, and has passed through several ore bodies, each from two to six feet wide, and carrying from 6 to 15 per cent. copper, \$2 to \$16 gold and some silver. The vein is about twenty-five

pect a large ore tonnage to develop there. The men interviewed are conservative miners. The district is probably very well worth a trip of inspection.

It is stated that a steamboat is to be put on the Colorado River to ply between the camps, starting up near Whipple Mountain, and Needles, Cal.



IN THE COPPER BELT

OCT 13

10-13-06 (10)

10-13-06 (11) OCT 13 1906

# SUCCESS AT THE ZENDA MINE.

After Many Attempts a satisfactory Process of Ore Treatment is Found. Five Bars of Bullion Have Arrived.

**A**FTER THREE YEARS of work, and after the expenditure of between \$120,000 and \$130,000, the Zenda mine, eleven miles from Caliente, in Kern county, California, at last is turning out bullion. The trouble has been due to an exceedingly refractory ore which failed to yield to the methods employed for its reduction. During the three years the mine has had six superintendents, and the ore has undergone six different processes. The first five failed utterly to extract the values. The sixth is successful. Last week L. W. Morgan, the present superintendent, brought into the company's office in Los Angeles five bars of bullion, the result of three weeks' work, under his new process. The first of these bars, turned out as an experiment, weighed five pounds; the others, 31, 33 1/2, 43 and 58 pounds respectively.

The first attempt to treat the ore was made with a dry crusher. That

failed. Then a cyanide plant was installed. That failed also. Next an amalgamation plant was set up, but neither the silver nor the gold—about ten per cent of the values are in gold—would amalgamate. After that recourse was had to the hypo process, but with no better results.

Last March Mr. Morgan took charge of the mine and at once set to work to figure out a method of treatment adapted to the quality of ore he found there. Finally he decided upon a pan, amalgamation process, with two settlers and new concentrators. Under this plan, the ore, after passing through the mill, is sized, the coarse sand going to one table, the fine sand to a second, and the slimes to a third. From 1 to 1 1/4 per cent of concentrates are saved, running about \$500 in silver and gold to the ton. These concentrates are shipped to San Francisco.

After their removal the sands are treated in pans, and finally in settlers, where amalgamation is satisfactory. The saving is 87 per cent. of the assay values.

The ore at the Zenda contains ruby silver, silver chlorides and some sulphides. It occurs in a big blow-out, in a porphyry, granite and limestone

formation. The mine shaft is down 150 feet, from which level tunnels have been extended in several different directions, the workings comprising about 700 feet.

According to Mr. Morgan, the whole side of the hill seems to be mineralized and to carry values ranging from \$2 to \$80 a ton. The width and extent of the vein is not known, the work up to this time having been confined to the blow-outs, of which there are several; but it is expected to cut the vein by a tunnel driven into the hill 500 feet from the apex.

The mine is owned by the Zenda Mining and Milling Company, in which Dr. Charles W. Bryson and Mr. L. W. Chase of the Nadeau Hotel are heavily interested.

Practically the same interests own the Old Cowboy mine, one of the best known properties in Kern County. The two mines are operated together and much of the ore which occasioned the trouble at the Zenda mill came from the Cowboy. The two properties are about a mile and a half apart, and ore from the Cowboy is chuted down the mountain side to the dump, whence it is loaded on wagons and transported to the mill. The Cowboy vein varies in width from seven to eight feet, the

formation being practical at the two mines. Pick from the Cowboy, has satisfactory returns.

Activity is general in the district. At the Goldpea mill and cyanide plant 'tion; and preparations to resume work in the biggest mine in the valley a few days. Recently made on the 400 level the ore yielding very high five stamps will begin a short time. The ent to be opened up again porary shut-down.

OCT 13

OCT 13

10-13-06 (11) THE DESERT KING.

Local People Acquire New Property, in San Bernardino County. Will Consolidate.

Interests controlling the Jerome Canyon Copper Company, which recently transferred its activities from Arizona to San Bernardino county, California, where the company now is operating the Desert King gold mine situated on Leech Mountain, at the south end of the Panamint range have made arrangements to take over still another property, the Florence consisting of six claims on Avatar Mountain, and will re-organize, under the name of the Desert King Consolidated. The Florence group now is under option and the deal probably will be closed before the first of next month.

The officers of the company are Mr. J. W. Tibbott, president; Dr. R. B. James, vice-president; Mr. L. M. Holt, secretary. These men with the addition of Messrs. S. D. Graves and C. C. Fouts constitute the board of directors. All reside in Los Angeles except Mr. Fouts, whose home is in Middletown, Ohio.

The Desert King has been opened up by a tunnel driven into the mountain side 250 feet below the apex, and on the vein, which here averages eight to ten inches in width. The vein occurs between walls of porphyry and diorite, carrying values of from \$10 to \$50 a ton, the average being about \$12. The tunnel traverses this vein for a distance of 400 feet, and the company proposes to begin work on a second tunnel, 100 feet below the present one, within a short time. It is thought that the vein will widen with depth. The ore is free milling and the company has a five stamp mill on the property. Plans for the Florence group have not yet been formulated, but exploration work will begin probably next month.

OCT 13 1906

## Los Angeles Mining Review

OCT 13, 06 (11)

### STRIKES AT GREENWATER

**Ore in Lower Crosscut of Furnace Creek Copper Consolidation Plans. Greenwater Furnace Creek Active. Furnace Valley Starts Development**

**C**OPPER ORE WAS struck in the face of the 250-foot crosscut from the Copper Blue shaft of the Furnace Creek Copper Company, at Greenwater, last Sunday. The crosscut is being driven into the ore with all speed, and by latest advices with every indication that the ore body is the same as that exposed in the 150-foot crosscut, and in the shaft above the 100-foot station.

A large body of high-grade ore has been opened in the 150-foot crosscut during the past ten days. It has been demonstrated that the ore body is dipping more from the vertical, and hence is farther from the shaft than was anticipated. The lower crosscut, on entering the vein, passed through six feet of iron stained gouge matter. It is learned that the management now believes that the ore bodies at 250 feet depth will be as strong and of as high grade as in the upper workings.

It may be stated on the highest authority that the main points affecting the proposed consolidation between the Schwab and Clark interests have been practically settled, and that the details are now being arranged. Apparently the consolidation is considered of equal benefit by both parties, and no disagreement is anticipated. As yet there is no change of the general plan involving a smelter and railroad. The smelter will be at a point on the Amargosa River, where abundant water can be developed.

At the Greenwater, Furnace Creek property every available man has been set to work stripping gossan from the great outcrop. High grade copper ore is reported as exposed in several places, and wherever penetrated showing values ranging from 10 to 18 percent. All operators are finding difficulty in getting men enough to handle the demand for labor being extensive.

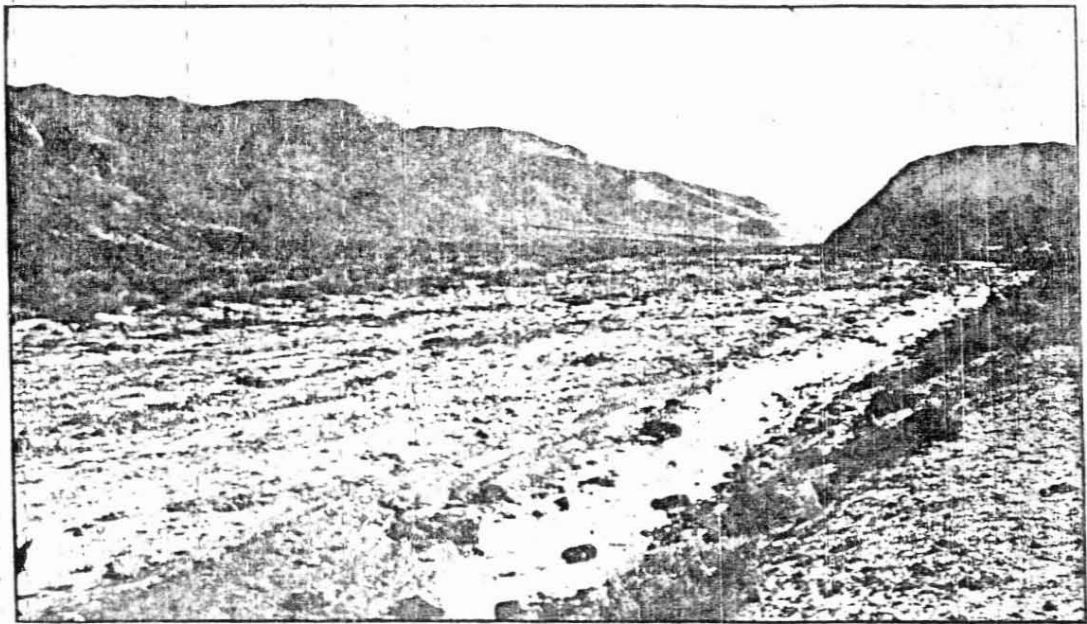
The Furnace Valley Copper Company is about to begin extensive developments. This company is a Clark flotation, in which Mr. John W. Gates, Mr. H. M. Kilburn, cashier of the National City Bank, New York; Sutro Brothers & Co., New York; Major B. C. Kingsbury, of Butte, Montana, and other capitalists are interested with Mr. Patrick Clark. The capitalization is \$1,250,000 par value of shares \$5. An allotment of 40,000 shares was offered in Los Angeles, recently, at 50 cents and was oversubscribed several times. The stock is now selling at about \$1.00.

The property is south of the Greenwater, Furnace Creek and in one of

between the Furnace Creek and the Furnace Valley zones.

It is stated that the Furnace Valley surface showing is as remarkable in extent, and for its high-grade surface ores, as those of other and better known properties in the district. The gossan is partly covered by alluvial wash, but has been shown by surface prospect work to be over 200 feet wide, and seamed with copper carbonates of exceptional grade. It is now the intention of Mr. Clark to push development of the Furnace Valley as vigorously he has that of the Furnace Creek.

OCT 13



THE ARMAGOSA RIVER, THE WATERS OF WHICH FLOW UNDERGROUND

the four proven, parallel copper zones of the district, which may be defined as follows:

Beginning at the south, the Kunze & Schwab zone, in which is the Greenwater and Death Valley Copper mine; the Furnace Creek Copper zone; the Furnace Valley Copper zone; the Greenwater, Furnace Creek Copper zone. These all strike northwest and southeast. The Heinze property lies



OCT 20 1906

## GREENWATER

Deeper development in the Greenwater district of Inyo county bears out the extraordinary promise so far shown by great high-grade ore bodies. Los Angeles can hardly escape a copper mining excitement of very respectable proportions.

It is quite among the possibilities that high-grade ores encountered near the surface in the Furnace Creek and other mines of the district, and known to continue to 150 feet depth, may go on unaltered to several hundred feet.

The veins are well up in the general Range and it is probable that water level will not be found in that region as near the surface as in other copper regions of the Southwest. In this some engineers argue, and for apparent reason, that the zone of secondary enrichment may prove these mines to be unusually deep. The original enrichment by ascending waters is conceded. Should this prove to be a correct estimate, Furnace Creek Copper and other Greenwater developments are likely to prove sensational during the next few months.

Another property which shows extraordinary promise for the amount of development, yet which has been little heard of, because it is owned by private corporation, is that known as the old Von Trigger mine in east San Bernardino county. This mine has been quietly opened and with results that would have insured great success had the shares been listed. Ore bodies as exposed are extensive, and are reliably reported to be of high grade; while water level has been reached, sulphide ores are abundant. There is, by latest report, no evidence of a barren zone. In the New Mountain district of the same county developments continue to be promising, though here again they are privately owned and debarred from that general interest which would be felt if owners would list them and set the stocks active.

Development is proving that to the west of Los Angeles, and extending into Inyo county well into it, not only San Bernardino, is a very promising copper belt in which great properties are now reasonably cer-

tain to be opened. If owners fail to interest the public in these enterprises, it will be because they lack perception of the growing tendency toward copper share investment, and of the means whereby they may legitimately seek and secure public support.

OCT 21 1906

## COPPER GOSSIP

There is more than rumor in the report from Butte, Montana, that Mr. John D. Ryan, will be the successor of Mr. Rogers in the presidency of the Amalgamated Copper Company. Mr. Rogers is nearing the time-limit of man's earthly career, and no doubt realizes that the day is not far distant when he will have to surrender his charge and leave the affairs of Amalgamated in younger hands. Mr. Ryan is a young man but he has shown himself the possessor of splendid business qualifications; his knowledge of men, and how to deal with them, surpasses that of most men, as has been proven in what he has accomplished for the Amalgamated Copper Company in Montana. One of the best things Mr. Rogers ever did was the sending of Ryan to Butte as managing director of Amalgamated affairs. There were wiseacres who at the time did not hesitate to assert that Mr. Rogers was committing a grave error in sending so young and inexperienced a man as Mr. Ryan to so turbulent a camp as Butte, where the Amalgamated Company had so many important interests; they even went to the length of asserting that Mr. Ryan would be but as dough in the hands of Mr. Heinze; the sequel however, shows that these Solons have "another guess coming." Mr. Ryan has not only been able to hold Mr. Heinze down but he has brought him "into camp." Mr. Heinze is now a lamb, but not a shorn one; Mr. Ryan was too clever to resort to the shearing process; he left Mr. Heinze his fleece. Mr. Ryan is an astute man; a man of steel,—with a hand gloved in velvet.

\* \* \*

In his management of Amalgamated affairs, Mr. Ryan has brought order out of chaos. That he is young is true, still he is old enough when the "chips" are in evidence, to give his opponent four kings and an ace and yet rake in the pot. His long suit is his knowledge of the *genus homo*. He makes it a point to know his man before proceeding to dicker with him; he can gauge to a nicety just how much to give in order to get; by such methods he induced Mr. Heinze to pile his arms and come into camp.

\* \* \*

OCT 20 1906

His capture of Mr. Heinze on terms satisfactory to the latter, is only one of Mr. Ryan's many victories in Montana. Not the least of these is his mastery domination of the labor element. He has a way of rounding up strikers that is beautiful to behold. He does not seize them by the gorge and gag life out of them; his methods are playful and pleasant, but none the less convincing—to the strikers. Miners—and the Amalgamated employs many thousands of them in Mon-

tana—who were ready to drop the pick at the drop of the hat, now take off their hat to Mr. Ryan, recognizing in him their best friend. In view, then, of what he has done for Amalgamated in Montana, it is not surprising that he should be mentioned as the more than probable coming president of the Amalgamated Copper Company.



OCT 20 1906

## Los Angeles Mining Review

OCT. 20, 06 (1)

OCT 20

OCT 20

## GREENWATER COPPER MINES

**Latest Reports from New District. Clark Copper Company formed here with Strong Backing. Water Development. Railway Rumors**

**T**HE CROSSCUT from the 250-foot station of the Furnace Creek Copper main shaft has reached the hanging wall. Drifts are being run on both walls. The faces are all in ore of high-grade, running from 10 to 40 per cent. Indications are strong that the main ore body is

system, is president of the new company. Mr. Patrick Clark of Spokane, president of the Furnace Creek Copper and many other mining companies, is on the board. The other officers are: Mr. James P. Harvey, manager of the Furnace Creek Copper Company, Mr. H. L. Percy and Mr. F. M. Lyon, both

the Kemplin group. There is as yet no development, but surface prospect work has shown high grade copper carbonate ore under the gossan, which varies from 200 to 300 feet wide. The officers of the new company purchased these claims two months ago after rather lengthy negotiations. The surface showing is said to be similar to that of more advanced properties and quite as favorable for large ore bodies. Serious development will be started immediately upon Mr. Harvey's return, and under his direction.

An allotment of 100,000 shares of the stock has been made for Los Angeles, and has been nearly all subscribed at 50 cents. The company will be listed at once on the Los Angeles and Butte Stock Exchange and within thirty days will be listed on the New York Curb. It is learned that engineers reports have been highly favorable, and that the vein will be opened with energy characteristic of all Clark operations at Greenwater. The capitalization is \$1,250,000, par value of shares \$1.

At the Greenwater Furnace Creek, sinking has started after vexatious delays. It was necessary to build a road to the property for transportation of the heavy material needed. This is now finished, the camp buildings are up and the shaft is under way. A hoist and material for a gallows frame

nace Creek and Schwab properties and is prepared to go 1000 feet deep if necessary. As no such depth has so far been required for good water supplies in many parts of the desert, it is hoped that an adequate flow will soon be available. At present water is hauled from springs 25 miles distant, the round trip consuming three days. As there are now four or five hundred men in the district, a large part of available energy is given to maintaining the precarious water supply.

A townsite is now being platted near the Furnace Creek Copper holdings by the Clark interests. It is reliably reported that consolidation plans, as outlined in recent issues of the Mining Review are nearing completion and that details will soon be announced.

Rumors are rife both here and at Greenwater of plans for immediate construction to the camp by both the Tonopah and Tidewater and the Las Vegas and Tonopah railroads. There is little foundation for these. The Smith road cannot possibly reach the Lillah C. mine, which is seventeen miles from Greenwater, in less than four months even though the force be increased by 300 men as is the reported intention. The Clark road could make no better time into the district. Furthermore, it is safe to say that neither will make a move until some arrangement can be made with the big min-



LOS ANGELES MINING REVIEW

HAULING WATER TO GREENWATER, CALIFORNIA

less than forty five feet wide of melting ore. On Tuesday last was incorporated in Los Angeles, the Clark Copper Company, owning six claims in the district of the Greenwater Copper district and which will be extensively developed.

J. Ross Clark vice-president general manager of the Salt Lake

of Los Angeles. Among the shareholders are several of those prominent in the other Clark companies, among them Messrs. John W. Gates and H. M. Kilburn of the National City Bank, New York.

The group owned by the Clark Copper Company adjoins the Furnace Valley holdings, and is an extension of

will be shipped from Los Angeles in a few days. It is stated that high grade ore is being taken from the new shaft.

Water is the most serious question at Greenwater and an effort is now being made to secure a local supply. Mr. Clambitt, with a powerful well boring outfit is now sinking between the Fur-

ing interests that will have most of the tonnage in control. That is the plum that each of the railway companies is reaching for, and without which neither can well afford to build. If the proposed consolidation of heavy interests goes through, a railway built by the Clark, Schwab people to connect with both existing lines would best solve this question.

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Los Angeles, October 20, 1906

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## GREENWATER STOCKS

New flotations of Greenwater copper companies are coming on rapidly, but no more so than might have been expected.

It is well, at this time, that investors should consider carefully the situation; for shares good, bad and indifferent are already on the market and it is inevitable that their number will be greatly increased in the near future.

There are, in the Greenwater field, exceedingly strong interests and these are operating legitimately. We refer to the Clark, Gates, Kilburn people who stand behind Furnace Creek Copper, Furnace Valley Copper and now, with Mr. J. Ross Clark, behind Clark Copper; the Schwab, Macdonald, Gillies interest controlling the Greenwater, Death Valley Copper Company; and the Woollacott, Off, Nixon people, controlling the Greenwater, Furnace Creek. These groups of capitalists are all strong and able not only to carry out plans of development, but to command support of the best sort for larger projects, which must be carried out before Greenwater can pay a dollar. The properties they own and the stocks issued upon them are all, as yet, frankly speculative, but with unusually good chances of making good. Shareholders can at least have the assurance that competent engineers have advised development and that no money, brains or labor will be spared in such development; furthermore, that they will have a good run for their money

and that, with final success, profits will be heavy compared to the investment, with many speculative chances during the interval.

For other flotations not so much can be said. Most of them are followers of the big interests, bidding for public favor on the strength of what others have, and what others are doing. They are looking for crumbs that fall from the big men's table and they will gather in many such. It is almost certain, however, that such concerns will find it next to impossible to secure the heavy capital that is necessary for development of big copper mines; and that most of them will remain tail-enders and sources of much disappointment.

In the long run, the big interests will control railway and smelter facilities. If Greenwater is to be made a great copper camp, the big interests will do it in the shortest possible time, most thoroughly and with the best professional advice that can be secured. They will control the situation and those interested with them will be safer than those who are not.

OCT 20

## COPPER GOSSIP

Copper is the millionaire-maker of the present day. It is making millionaires of more men than gold or silver has ever done. A dozen, and more copper mines could be cited that have converted penniless men into millionaires, and all within the last dozen years. The gold mines of California and silver mines of Nevada, have turned out some good specimens of the millionaire-miner, but not one of them can hold a candle to copper in the millionaire-making business. Look at Michigan, Arizona, Montana, Mexico, Utah, California, with Nevada on the way, and see what they have done and are doing. Millions? Why the copper mines of these States are making more millions to the square inch than all the precious metals combined,—with diamonds thrown in. Agriculture does not make millionaires; never has,—except for railroad presidents.

OCT 20

Southern California, is going to take a hand in this millionaire-making business. Furnace Creek Copper, of Inyo county, is demonstrating its capability of doing something along those lines; nor is it losing any time over it. When a copper property starts in making millionaires it does not put its hand to the hoist and then look backward. It has no time to look anywhere except at the man who is yelling, "give me more copper." The copper consumer is a great factor in these days of civilization and progress. Give him all the copper he can use and he will make sixteen blades of grass grow where only one grew before,—speaking metaphorically, and without any reference whatever to the Bryanite ratio of 16 to 1. Here is Furnace Creek Copper that up to a few months ago people never heard of, and when they did it was only to learn that the property was situated in that thirst-devouring, death-dealing region known as Death Valley, which, as eminent geologists will inform you, is only one block distant from Hades, and with only a sliding door between. But that did not interfere with the fact that Furnace Creek had copper, and has it in abundance; the result of all of which has been that stock in it, put on the market at one dollar a share, is now hard to get at five dollars a share.

OCT 20 1906

## INTEREST IN MINES

As a mining center, Los Angeles has been making remarkable gains during the past two months and from several causes. Not the least of these has been the increasing number of Nevada operators and mining men who, since the Las Vegas and Tonopah railroad was opened to traffic, have made this city their summer stamping ground.

These men are perhaps optimists, but they have cause to be. They radiate optimism. They give, too, tangible evidence of success as did the Klondike miners in Seattle a few years ago—so that many who have been indifferent to the mineral wealth of this corner of America, are thinking hard of the profits others make and of possible opportunities for themselves. Man after man of position and means is going seriously into mining, and investors of all degrees of wealth are buying mining stocks as never before.

There is, too, a much healthier tone to the local situation than could be claimed two months ago. Though the volume of investment is much larger it is for the most part made either through close corporations of a few men or in listed stocks through legitimate exchanges, whether here or in the East. The day of the bucket-shoppers and of flash advertising fakery seems to be distinctly on the wane, for the time being at least—and we believe that these undesirable gentry are, for once, giving honest testimony when they say that with their discomfiture we have had much to do. People here are fast learning that in mining, as in other things, it is best to control one's own money—to join in a small corporation organized for the legitimate development of a property, or to speculate where there is a selling as well as a buying market. Stocks that "positively advance

ten cents before breakfast on Monday morning", are no longer in demand—nor is any kind of expensive clap-trap, for which there can obviously be no money to pay save that subscribed for mining purposes.

Greenwater securities have done much to attract people to the Stock Exchange. There are now close to 90,000 shares of Furnace Creek Copper held in Los Angeles, and it is much to be regretted that three or four times as many were not originally placed here. As it is, investors have already profited handsomely and in a very few weeks. If, as is now practically assured, the consolidation with the Schwab property takes place, a larger allotment of the new issue will doubtless be made here, and is certain to be taken up with an avidity.

Furnace Valley, another Clark property, would be very active on this market were there more shares. The 40,000 allotment was taken by people who are apparently holding on for a substantial advance, and unless more shares can be drawn from New York, there is hardly enough of the stock here to make active trading. This may, however, be remedied.

Greenwater, Furnace Creek is largely held locally, and when listed will probably be an active stock. Such is much needed. There are good mines and prospects on the Los Angeles Stock Exchange; but not one, so far, in which the public has enough at stake to cause that general interest which alone can make a good speculative market. In spite of this, the business of the Exchange is growing and the time is fast ripening for fuller participation of men of moderate means in mining enterprises through this recognized medium.

In the meantime, Los Angeles merchants and manufacturers are doing a vastly increased business in Nevada, Arizona and Mexico. Mine operators are coming here to place orders and find that local machine shops are well equipped to fill them. The volume of trade is growing, as is metal output of mines controlled from here.

OCT 20



# Los Angeles Mining Review

OCT 27 1906

10-27-06

(7)

## THE GREENWATER DISTRICT.

Several New Enterprises Started.  
Bank to be Established. Senator  
Carter and Associates Invest.

**R** EPORTS THAT plans of consolidation between the Furnace Creek Copper and Greenwater and Death Valley interests have been abandoned cannot be confirmed. It has been evident for a week past that the Clark and Schwab parties are each holding out on minor details. The benefits to be gained by consolidation are such that, unless some serious hitch has occurred, those well informed believe the deal will go through, though it may be delayed for some weeks.

A corporation has been formed under the laws of Arizona, to be known as the Pittsburg and Greenwater Copper Company and which will take over control of the Iron Mask group of sixteen claims, situated seventeen miles southeast of Greenwater. These claims were located by H. G. Betts and have been sold by him to Judge V. T. Hoggatt of Manhattan, Messrs Len P. McGarry and A. G. Cushman of Rhyolite and Mr. B. F. Shepherd of Fresno, Cal., who are said to have paid a very considerable sum for the properties. These gentlemen have organized the holding corporation, which has been capitalized at \$2,000,000, the shares having a par value of \$1 each. Of the issue, \$1,000,000 will be reserved as treasury stock. Mr. McGarry is president of the company and will personally superintend work on the properties, which already has begun under his direction. The claims are situated on Black Butte, said by the original locator to be an extinct volcano. The copper deposits occur in a contact of diorite and porphyry, the latter forming the footwall on which the richest deposits are found. Mr. Betts is quoted as saying that on parts of the property ore in quantity can be mined from open cuts. He does not, however, say what percentage of values this surface ore will yield.

Mr. Harry Lefkovits of Goldfield, and Los Angeles, and who is heavily interested in the Greenwater district, has recently added to his holdings there, while on a trip to the Mayflower Extension, where active work was begun last week. In addition to his interest in the Mayflower, Mr. Lefkovits owns stock in the Furnace

Creek Consolidated Copper Company. Like many others he regards Greenwater as the coming copper field of the southwest and has not hesitated to invest his money in its prospects. With Mr. Kunze, Mr. Lefkovits plans to open a bank at Greenwater. The fixtures, he says, will be on the ground within thirty days.

State Senator Henry E. Carter is another Los Angeleno who is evidencing his faith in Greenwater in a substantial manner. Senator Carter is president of the Searchlight Mining and Milling Company and has been in Searchlight recently to superintend the installation of additional equipment at that property. From there he visited Greenwater and was so thoroughly satisfied with what he found that he determined to invest. Before he left camp this determination had been realized, Senator Carter and his associates acquiring a group of eight claims, situated about two miles south and west of the Furnace Creek Company's holdings, along the ridge of the Funeral range.

Development work has been begun on the Greenwater Calumet properties, recently purchased by Mr. James M. Meighan of Tonopah, and associates, and is progressing favorably under Mr. Meighan's personal direction.



## IMPROVEMENTS AT GREENWATER

**Furnace Creek Copper Shaft to be Sunk to Water Level. Favorable Development at Depth. Plans for Smelters. Several New Flotations**

IT IS ANNOUNCED on reliable authority that the Furnace Creek Copper Company will at once begin sinking the Copper Blue shaft to water level, which is not expected short of 500 feet. Preparations for this work are now under way.

This determination of the management is because of satisfactory developments in drifts from the 250-foot crosscut. Two drifts, forty feet apart, have been run out in the same direction. These are now ninety and ninety-five feet long respectively, and both faces are in carbonate ore of high grade. Sufficient ore has been developed in these workings to satisfy the management that the ore bodies are continuous from the surface, and that there is every indication that they will go down to, and below, water level.

The proposed consolidation between the Furnace Creek Copper Company, and the Greenwater Death Valley Company has met with a check. This is because the question of the presidency has not yet been decided as between Mr. Clark and Mr. Schwab, and it seems probable that on this difficulty the plan will hang fire for some weeks, if it be not abandoned altogether. It has been understood that, in the event of a consolidation, the companies would come in on an equal basis. The two interests, by latest report, finding that control will go with the presidency, are neither inclined to give way.

In the meantime both the big companies are actively preparing to get along alone. The Clark-Gates syndicate, with which Mr. J. Ross Clark has been affiliated and which is believed to have even heavier backing than is generally known, controls Furnace Creek Copper, Furnace Valley, Clark Copper and the Kempland Copper Company, a new incorporation perfected this week. It controls also a townsite and has for some time owned a better site at a favorable point. These various Clark companies own very large and well selected acreages in the heart of the Greenwater district. All are under the direct management of Mr. James P. Harvey, with Mr. Patrick Clark in active control. Development of the properties has been particularly energetic and, considering the difficulties, progress has been rapid.

If consolidation with the Schwab interests should fail, it is thought by those well informed that a merger of the Greenwater properties in which Mr. Clark is a chief factor will eventually be effected, to the end that from all the mines may be treated by a common smelter of adequate capacity for which tentative plans are in hand. It is learned on excellent authority that capital for this purpose has been offered, and that it may be accepted.

Schwab interest is also under-

stood to be planning an independent smelter. Mr. Schwab and associates have not such extensive holdings in the Greenwater district as has the Clark-Gates syndicate, but the Greenwater Death Valley, promises to develop into a great mine. Mr. Schwab has also the Montgomery-Shoshone in the Bullfrog district, in which are immense reserves of high-grade silicious gold ores, and the two properties are not so far apart that, with proper railway facilities, a smelter of good capacity could not treat ores from both advantageously.

The railway question is still in the

ore-zone to be very extensive, and that samplings yield returns of from 10 to 40 per cent. copper.

The Kempland Copper Company was incorporated in Los Angeles this week, to take over the Kempland group which adjoins the Clark Copper Company's holdings. On this ground is an outcrop of gossan, the largest in the district, which is reliably stated to be 1800 feet wide. The gossan is seamed with copper carbonates and occurs in one of the five great zones recently described in the Mining Review. Messrs. Patrick Clark, John W. Gates and other heavy Furnace Creek Copper interests are also in this company. It is probable that a considerable allotment of the shares will be offered in Los Angeles.

The Clark Copper Company allotment, of 300,000 shares, has been already over subscribed by local

air. There are rumors, and even circumstantial reports, of agreements with one or more of the railway companies to build to Greenwater, but it may be stated decidedly that no definite agreement has been made though both the Las Vegas & Tonopah and the Tonopah & Tidewater managements are watching developments at the new copper camp with keen interest.

Recent work at the various big properties continues, by reliable report, to show favorable results. It is learned from an engineer who returned from the district this week, that good progress is being made in the Greenwater Furnace Creek property. The shaft is down twenty-five feet and shows high grade ore in the characteristic formation. Other openings, which are numerous, have shown ore of excellent grade wherever the gossan has been stripped. Our informant states that in the district, among miners and mining men, this property is considered as among the few best, both as to surface showing and quality of the ore exposed. It is learned from the same source that the management is energetic and able. A 25-horsepower hoist and other equipment is to be shipped from Los Angeles to the Greenwater Furnace Creek next week. The location for the main shaft having now been determined, the company will sink as rapidly as possible. At the company's offices, in Los Angeles, it is stated that surface work has shown mineralization of the

investors at 50 cents, and it is learned that demand was strong for 100,000 more shares. This issue has gone particularly well here. It is stated that the company will make no further sales in this market, as eastern demand has been also strong.

The Greenwater formation has been the subject of much discussion of late. From an engineer of extended experience in copper mining, and who has been afforded an opportunity to examine the underground workings of the Furnace Creek and other mines of the district, recently, the following is learned:

The copper bearing zones, so often referred to, are belts of acidic por-

NOV 3 1906

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(5) WEEKLY \$2.00 PER ANNUM  
SINGLE COPY, 10 CENTS.

phyry occurring in granite. In these belts are very frequent fissure veins, more or less parallel, and carrying high-grade copper ores. The veins vary from six inches to six feet or more in width but represent a considerable percentage of the whole mass. They have every appearance of enrichment from great depth. Between the veins, the silicious porphyry has been more or less enriched, the source of mineralization having evidently been the veins themselves. The carbonate ores within the vein fissures are of very high smelting grade. Between, are lower grade ores, much of which could be treated in a smelter located near the mines.

This engineer believes that at water level sulphides will come in, and that immense tonnages of the mineralized gangue can be concentrated, yielding a good commercial product; while an important zone of secondary enrichment is probable, as in portions of the belt the effects of leaching are evident. He also believes that development will prove that these great belts of porphyry are very extensively mineralized, as high-grade ore has been found, in certain cases, in both contacts with the granite and in many exposures between.

This view of the formation, submitted to several copper men who have visited Greenwater, is concurred in by them. The impression is growing, among those well informed and conservatively inclined, that the prospect for a great copper district is steadily improving.



CHARACTERISTIC COPPER-BEARING ZONE ON GREENWATER FURNACE CREEK PROPERTY

11-306 (5)

NOV 3 1906

11-3-06  
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## THE BULLFROG DISTRICT

Progress of Tonopah and Tidewater. Great Shipments from Shoshone Being Prepared. Sensational Rock in Gibraltar

(SPECIAL CORRESPONDENCE OF THE MINING REVIEW)

**B**EATTY, WITH ONE railroad, soon is to have another. Mr. John Ryan, general manager of the Tonopah and Tidewater, is quoted as saying:

"We have 80 miles of steel laid from the Santa Fe and are doing heavy rock work in Amargosa Canyon on the way north; have 400 teams and a small army of men at work. Will reach Lila C. mine fifty days after completing work at canyon, and railroad will reach Beatty sixty days later."

Superintendent Nelson of the Gibraltar mine, exhibited a sample of ore from the mine at Rhyolite a few days

ago and later, to decide a bet. The rock assayed, the result giving an indicated value of \$20,203.40 to a ton. The ore came from the stop in No. 2 tunnel and was taken from a narrow streak, said to return an average almost as high as the sample. The rich material is being sacked for shipment.

Piled up on the dump at the Shoshone Consolidated mine, is 7,000 tons of shipping ore which, according to the statement of Mr. Donald B. Ellis, carries average values of at least \$100 a ton. This ore is being shipped until the arrival of the railroad. It will be shipped to the smelter as rapidly as cars can be secured for

purpose. By that time, however, the accumulation will have increased considerably, and it is quite within the bounds of possibility that the shipments will amount to an even million of dollars, before the railroad succeeds in catching up with the mine's output. Work on the Shoshone is proceeding rapidly. A new three compartment working shaft has been started, 7 by 21 feet in dimensions, and will be sunk to the 1,000-foot level. The old shaft is down 400 feet and the vein, cut at that level, shows the same values found above. Ground has been broken for a new mill and the contract for the machinery has been let to a New York company, its terms calling for completion within 113 days from October 23.

Drifting on the 60-foot level at the Shookum has proceeded for forty feet, all in good ore. Moreover values are increasing constantly, which seems to verify the theory that the main ore body is in the hill, where there are a number of big ledges as yet untouched. The property will be developed thoroughly. Ore taken out in the course of development work now in progress is being sacked for shipment.

Sinking is in progress on the Missouri group of claims at Mud Springs, the main shaft now being down forty feet. The property, under bond to Boston interests, bids fair to develop into a rich mine.

Mr. Ed. Cross who, with "Shorty" Harris discovered the Original Bullfrog, has taken a year's lease on 200 by 300 feet of ground, at the east end of the Original and already has begun development work with a good force of men employed.

Within a few days the Tramp Consolidated will make a forty-ton ore shipment to Salt Lake, the first considerable consignment of ore to be carried over the new railroad. Half of the rock will come from the Denver and half from the Eclipse mine.

According to a report current here a new camp of excellent promise is in process of formation, two miles north of Oasis Dairy farm, near Indian Ranch, in the Bullfrog district. Here a ledge crops for a length of 8,000 feet and so far as explored shows increasing values with depth. A big mill is to be erected near Indian Ranch and the Borax Smith road, now building down Amargosa canyon, will provide good transportation facilities. Several claims are being worked and with uniformly good prospects.

T. POLE.

Rhyolite, Nevada, November 1.

11-3-06/21



NOV 10 1906

# Los Angeles Mining Review

NOV. 10, 06

NOV 10

## THE FINDING OF GREENWATER

**Discoverer Tells for the First Time How the Great Copper Camp Was Located**

(SPECIAL CORRESPONDENCE OF THE MINING REVIEW)

**I**NTENSELY interesting is the story of how Fred Birney of Spokane, discovered the Greenwater copper district in California, where Patrick Clark, also of Spokane, and a number of eastern capitalists are now developing rich properties. He is living quietly in Spokane. While he has passed more than a dozen years in mining camps of the Inland Empire and California and Nevada he does not look the part of an experienced prospector. He came to this country 17 years ago from Belfast, Ireland, where his father is a shoe manufacturer.

It was he who first located the properties now owned and operated by the Furnace Creek Copper Company.

Mr. Birney, who was accompanied by Phil Creasor on the prospecting trip into the Death Valley region of California, told the story of the "find" in these words to your correspondent:

"Phil Creasor and I left Goldfield, Nev., Dec. 13, 1904, well outfitted for an extensive prospecting trip into the desert. We had nothing in particular in view. Our only purpose was to get into some part of the great desert which had not been previously prospected.

"We loaded our outfit on four large Spanish burros and struck out for the south. We prospected along from one camp to another until we came to Ash Meadows, 130 miles from Goldfield. There is abundance of good water at Ash Meadows on the Amargosa River. We found there an Indian family in camp and one of the Indians, Bob Black, who could speak a little English told us of a section of mountain and desert 35 to 40 miles away that had never been penetrated by white men. Two days after the Indian gave us this information he murdered his squaw, her brother and two white men.

"We loaded the burros with as much water as they could carry in five gallon oil cans, 160 pounds of water to each animal, and set out for the region described by this Indian. We had to put the burros on short rations of water. We gave them one drink a day, two gallons to an animal;

then hobbled them and let them rustle for the night.

"We worked our way up to the dry mountains and made camp one night at a point about six miles from the discovery. We were up at daylight the next morning, and about 4:30 o'clock I discovered some little pieces of copper stained ore, not larger than my thumb, which had evidently drifted down the dry bed of what occasionally had been a large torrent from cloudbursts. I said to Phil Creasor

that I would go on ahead and prospect this wash, leaving him to follow later with the animals.

"I worked my way up the wash for five or six miles, tracing the float at different places until I came to a point

unknown country, and we set our course by the compass. We went back a few days later and staked 16 more claims. As there was nobody else in the country, we prospected in a leisurely way and took the cream of the district.

"In prospecting there is a great deal in luck, or destiny. I suppose I might have passed over the same route 100 times and never have noticed the float if my eye had not casually fallen upon it that morning at daybreak. That country is so dry that the rocks show little stain from the copper ledges. The float I discovered that morning was undoubtedly washed down by cloudbursts.

"Mr. Creasor is one of the best prospectors in America and no man better understands the correct way in which to stake claims.

"It is a remarkable fact that when the surveys were made later, we did not lose a foot of ground in our original locations. So carefully was it all done that we have never had a contest on any of the claims.

"The nearest approach to that occurred one day when my partner had gone out for mail and I was left alone in the camp. Three adventurers came upon the ground and declared their purpose to stake some of it. They un-

objection to tell could stake some be available. If five or six miles ward was found

Spokane, Wash



LATEST VIEW OF SHAFT AND DUMP OF THE FURNACE CREEK COPPER COMPANY

where I could find no more float. This was up near the summit. The pieces of float had been getting larger and then disappeared altogether. At that point I went up over a hogback, down into a little draw and there found big boulders of copper ore, and twenty or thirty feet away was the ledge, standing out like a wall. I ran back and called Creasor and we staked off six claims.

"We then walked across Death Valley, Lost Valley and the desert to Keeler, 180 miles, where we recorded our claims. Our way lay across an

doubtedly thought that when the surveys were made some fractions would be revealed and they would get them; but I was determined to prevent any clouding of our well earned title. We had worked three months in that desert and I felt that we were entitled to all we had discovered.

"The men had laid down their arms preparatory to staking a claim, and I was desperate enough to grab my revolver, get a drop on them and begin my argument. They promptly acquiesced in the justice of my position. I then told them that I had no



NOV 10

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FOUND BIG BOULDERS OF COPPER ORE. NEARBY WAS THE LEDGE STANDING OUT LIKE A WALL.

NOV 10 1906

NOV 10 1906

NOV 10 1906

NOV 10 1906

11-10-06 (10)

**CLARK COPPER**

We refer in another column to the Clark Copper flotation which, however, deserves special mention.

This company, organized here some two weeks ago with a capitalization of 1,250,000 shares, \$1 par, last week offered 300,000 shares for public subscription. It was intended that these should be placed in equal lots of 100,000 each in Los Angeles, New York and Butte, Montana. The subscription books were opened here first, and in three days 420,000 shares had been subscribed at 50 cents. New York got no shares, Butte got 10,000 and Bullfrog interests secured a like amount. The company has refused to increase the original allotment, and Los Angeles holdings are therefore 280,000 shares. The stock is now held firm at \$0 to 90 cents. The company is out of the market.

Of the \$150,000 cash capital with which the Clark Copper Company will start development of its ground, \$140,000 were supplied by Los Angeles investors while \$210,000 were offered—and with no advertising or other announcement save that made in the Mining Review of Oct. 27, and on the floor of the Exchange; and this is remarkably good testimony to the fact, which we hold to be indisputable, that this is a good market for mining projects well conceived, well backed and assured of good management. The people here are shy of schemes put forward by men of doubtful standing in the mining world, for by such they have been tried often and very thoroughly. They have gone liberally into Clark Copper, an undeveloped prospect, because they are assured of a square deal, of management highly competent and of prospects for success to which Mr. Patrick Clark of Spokane, and Mr. J. Ross Clark of Los Angeles, are willing to lend their names.

11-10-06 (10)

**COPPER OPPORTUNITIES**

While the mining world is concerning itself with Greenwater, and apparently to very good purpose, the hills of Southern Inyo county and eastern San Bernardino are filled with prospectors, working either independently or in the interest of mining capitalists along the great northwest-southeast mineral belt which extends from Death Valley to the Colorado River, into Arizona and Mexico. Already reports of high grade discoveries, some of them well authenticated, are many; and it seems not unlikely that within the coming year the Greenwater excitement may be repeated. If such a thing is to come about, however, it must be by just such a combination of circumstances as have served to bring Greenwater to the front with such startling rapidity.

The first essential will be prospects as promising. Though it is too early for comparisons, it may be conservatively stated that in four and possibly five districts within the belt mentioned, copper veins of most excellent promise are being opened—some of them with the earmarks of big mines that will justify very thorough development.

The next essential, and it is as vital as the first, is that the right men be induced to take hold. Every mining man knows that Greenwater might have stagnated for years, falling utterly of recognition, had it not happened that a mining capitalist noted for success acquired a property which, under development, made a great showing. The man and the mine in combination were conspicuous enough to cause a rush of capitalists—a sort of stampede which rarely occurs so early in the mining game. This, together with the opportune rise of copper and results actually obtained from development, have made Greenwater's reputation.

If the district makes good, and in view of the excellent showing in the 250-foot level of the Furnace Creek there seems now to be reasonable assurance of this, there will not be enough copper properties there, by many, to fill the demand—for most of the great copper interests are not represented. The Guggenheims, Phelps, Dodge & Co., the Giroux following, Thomas F. Cole and his people, Samuel Newhouse, the Amalgamated interest, Westinghouse, General Electric and other heavy aggregations of copper capital, too many to mention, are not in the new camp, yet the advent of anyone of these would make a neighboring district famous at once. Not one of them is averse to high-grade copper ore in quantity, and it needs no prophet to foresee that some at least of these interests will be

found in the Inyo-San Bernardino copper belt if great mines develop there.

In this, there are excellent opportunities for Los Angeles people. Within a few hours of the city is a road some 180 miles long and several miles wide within which are known to be numerous copper veins of much promise, awaiting development or already under development. Some of these will almost certainly make money, and those that show good promise, it will be readily saleable at great advances over the cost of opening them. The region we have mentioned is at the present time one of the good places of the earth in which to prospect, both above and below ground.

11-10-06 (10)

NOV 17 1906

Vol. XX, No. 20

LOS ANGELES, NOVEMBER 17, 1906.

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## RAILROAD FOR GREENWATER

**Extension of Senator Clark's Line Now Practically Assured. Copper Blue Shaft Going Deep. High Grade Ore in Greenwater Furnace Creek. Other Developments**

**C**ONCERNING THE proposed branch line of the Las Vegas and Tonopah railroad to the Greenwater copper district, Mr. J. Ross Clark, vice-president of the Salt Lake Route, said to a representative of the Mining Review:

"The survey has been made to Greenwater, and if development of the mines continues to be favorable, the road will be built. You may say, without overstating the case, that if such progress is made as there is now good reason to expect, construction of the line will be started within six months.

"I have just returned from Greenwater, and I was much impressed by the showing there. The people are doing lots of work. The mines are looking exceedingly well for the stage of development, and there are excellent reasons for the belief that a great copper camp will be developed.

"While we wish to see more ore in sight before beginning construction of the railroad, we believe that within a very short time this undertaking will be justified."

The Greenwater, Furnace Creek Copper Company's main shaft on the Junebug claim is now down forty feet

in solid ore of high average grade. Two shifts are being worked and hoisting machinery is to be installed as soon as it can be freighted in. Two new openings have been made this week—one, a tunnel on the May Queen claim which will tap the vein at 200 feet depth, the other a shaft in the vein which will connect with the tunnel. Two shifts are being worked in both these openings. The new shaft has penetrated the gossan and is all in ore. A telegraphic report from Mr. H. H. Clark, received here on Thursday, indicates that this property is showing remarkably well for the amount of work accomplished.

The Copper Blue shaft of the Furnace Creek Copper Company is now down 290 feet. It is stated that no further crosscutting will be done until water level, which is expected at about 500 feet, has been passed. The management is satisfied, by developments in drifts on the 250-foot level, that the ore bodies go down strongly. The object now is to reach the expected sulphide zone.

Active development has been started on the Clark Copper property. The shaft has been sunk through the gossan and is all in ore of average high grade, with extremely rich ore showing in streaks. The company proposes to sink this shaft to at least

500 feet depth, and is about to order suitable hoisting machinery.

The Kempland Copper Company, the organization of which in Los Angeles, was announced in the Mining Review last week, has been listed on the Stock Exchange. This, it is said, will be the last of the Clark flotations at Greenwater. As a prospect, the property probably has a greater surface showing than any of those previously opened. The gossan, with copper carbonate streaks, is reliably stated to be at one point 1,300 feet wide. The property comprises 22 claims and is under the management of Mr. James Harvey of the Furnace Creek Copper Company. The Kempland group lies next to the Greenwater Furnace Creek property.

The Sunnyside and Pennsylvania groups, consisting of thirteen copper claims, have been sold for \$200,000 to the Heinze's interests of Butte, Montana.

The properties are reported to show high grade ores, comparing values favorably with any undeveloped properties in the district. A great ledge traverses the property, on which assay values of from 5 to 50 per cent. copper are obtainable while there are numerous cross ledges four to six feet wide, which show values of 18 to 21 per cent. copper.

The claims adjoin several of the big properties in the district, the Furnace Creek property being on the west, while on the east is the Hank Knight and Greenwater Death Valley Copper Company; on the south the Funeral Range group belonging to Nash and Wallace and the Oddie Blue

Bell group; and Kuntze group.

It is reported offered for this within forty-eight of its purchase.

NOV 17 1906

NOV 17

## Los Angeles Mining Review

11-17-06 (10)  
**BULLFROG ORE SHIPMENTS**

Bullfrog is now on a shipping basis—and that means that, following the lead of Goldfield, the Bullfrog district is about to make a second bid for public favor. That the public will respond can hardly be doubted.

The history of this camp is remarkable. Two years ago it was a possibility. A year ago it was suffering the effects of over booming. It has been developed rapidly in spite of the long wagon haul of ninety miles from Goldfield. Its mines have, after but a few months of work, shown payable ores in quantity to justify the building of three railroads, not to mention very extensive reduction works. This means that large amounts of money have been intelligently and successfully expended in actual underground development.

It has been said of the Bullfrog district that its promoters were boomers. That may be conceded—but judging from results, a thousand or two of such boomers sprinkled among our California mining camps would double our gold output. These men have not only talked, they have achieved. They have done in two years what other men in districts of equal promise have failed to do in twenty years. They found rich ore and they shouted themselves hoarse over it—but they got money to open their mines and then they did open them; so that now Bullfrog is prepared to ship something like \$2,000,000 worth of ore as fast as the railroad can move it out. That money will pay for many miles of shafts and levels—and for big mills to reduce the lower grades of ore.

It is fortunate for Bullfrog the Goldfield capital, which during the past year has accumulated marvellously, and which is mining capital exclusively, is heavily interested. Some of the most successful of Goldfield operators control Bullfrog enterprises. They are men who believe that ore should be turned into money and may be trusted to bring the mines to a producing basis with unnecessary delay.

One rather absurd doubt as to the value of Bullfrog mines, entertained by many worthy people who have been used to the mining game and some engineers who should know better,

is caused by the fact that these mines are not open to inspection. No one, engineer or otherwise, is granted admission unless by the very rare given permission of those in control. It should not be forgotten that these mines are listed on one or more stock exchanges—and that first information as to strikes or other developments of importance is, by long custom, the prerequisite of controlling interest. That the mines had payable ore was paying quantity when Senator Clark undertook to build a railroad 150 miles long to the district, may be accepted as a fact. The Senator is too good a miner to act on anything less than certainty in this respect.

Bullfrog is now, after a year and half of continuous development and many months of waiting for railway facilities, a producing camp. From reports made by competent engineers there is a good reason to believe that already several great mines are demonstrated. These matters should be of particular interest to Los Angeles people of two distinct classes: Investors who may, with reasonable certainty, look for a general advance in the leading Bullfrog stocks; and merchants and manufacturers, especially of mining machinery, who can find now on hand in the Bullfrog district one of the most important markets tributary to this city.

NOV 17

11-17-06 (10)  
**RAILROADS FOR GREENWATER**

The announcement made this week that the Las Vegas and Tonopah line has surveyed a branch into the Greenwater Copper district, is a most important one. Though it has for some weeks been evident that one and probably both of the new lines would sooner or later extend feeders to the camp, the early building of either will do much to keep general interest centered upon Greenwater and its extraordinary copper prospects. The line from Amargosa will not be a long one, and as no serious engineering difficulties are anticipated it is quite possible that Greenwater may escape the period of reaction and dullness which usually comes to mining camps after the excitement of discovery dies away, and before transportation facilities make realization

of exposed values possible. Such a time of depression has been suffered by Tonopah, Goldfield and Bullfrog turn. Each has had to wait for an outlet for ores developed and known shipping grade, depending during the interval upon outside capital for exploitation of ore bodies; and this has, in a measure, retarded development. However great the merits of a mining district, investors are never so ready in its support as when they may see some returns from shipping ore.

If, as is now anticipated, the Las Vegas & Tonopah begins construction of the Greenwater branch by next Spring, public interest in that district will hardly have an opportunity to flag. With the promise of shipping facilities, capital for new enterprises will remain easy, and development will continue under high pressure to the end that ores of smelting grade may be ready. In view of the several quite extensive high-grade exposures, it is not improbable that some of the mines of Greenwater may, like the Cananea Central, pay for their own development from the time tracks are laid to the ore bins. Even though but a small part of such cost be realized, there would be in the fact cause for growing confidence and appreciation in the intrinsic values of shares—a matter vastly important to all who deal in mining machinery, and supplies here. With mining stocks in demand, money for development and equipment of mines is available to an extent impossible when investment is chiefly by capitalists, working through close corporations.

Greenwater will be singularly favored, early in its history, in having two competing lines of railway affording direct transportation to competing smelter points—for it may be assumed that the Tonopah & Tidewater will not be far behind the Clark line in reaching the new copper camp. Salt Lake, El Paso and San Francisco will all be in the market for raw ores, until such time as conditions justify local plants to reduce the run of mine product. 11-17-06 (11)



NOV 17 1906

NOV 17

11-17-06 (11)  
**COPPER GOSSIP**

There is no better fellow, take him the world over, than the successful mining man. Not necessary to diagram that. He may be a good fellow, naturally; born a good fellow, brought up a good fellow; a good chap under any and every circumstance, but a successful mining career just naturally makes a better fellow of him. As the mine shows up so does his heart expand; overflow in every direction. He wants to assist those who have been less fortunate; no time-lock on his pure strings.

It is not wrong to be just before being generous, rather is it right. The man who is developing a prospect may not be over-lavish with his money; small blame to him for not being. He is sinking a hole in the ground, and what money he may have he is pouring into the hole, nor does he know whether it will ever pour out again. If the men who do not own the property but who are working on it, would but give him time to prove it up, time to show whether it be a mine or a mud-hole, there would be fewer mine-labor troubles. A man is not necessarily a millionaire simply because he happens to own a hole in the ground.

All of which is suggested by the news from Butte, Montana, that all the large copper companies operating in that district and at Anaconda have posted notice of an increase in wages, to go into effect on the 15th inst. The notice reads that the increase is made because of the satisfactory condition of the metal market, and it will remain in force as long as the price of electrolytic copper is 18 cents per pound, or over that price. As about sixteen thousand men will benefit by this increase it is at once made evident that the total amount it represents is no mere bagatelle; it will involve an additional expenditure of something close upon one and a-half million dollars a year. Among the big operators in the district, outside of the Amalgamated Company, are Senator W. A. Clark and Mr. Augustus Heinze.

The average newspaper man may think he knows something about copper, in connection with its production in this country, but it will only be necessary that he scan the Copper Handbook—that excellent publication which Mr. Horace J. Stevens of Houghton, Michigan, has just given us in volume 6, edition for the year 1906—for him to realize that what he does not know about copper production and the wonderful position the metal now occupies in the industrial world, would fill a volume several times longer than the Copper Handbook—and it is not of Illiputian dimensions. Take, as an illustration in part, the increase in exports of copper from the United States. In 1864, their total value was less than \$435,000, and it took twenty years to bring the value of exports up to five and one-half million dollars. Today this country is getting something well on to one hundred million dollars a year for the copper it ships out. And that represents even less value than what this country is itself consuming. Present consumption of copper in the United States is estimated as being at the rate of eight hundred million pounds a year, which at ruling market prices represent a value of \$160,000,000 a year. A study of copper statistics is very interesting.

## GREENWATER COPPER DISTRICT

**Development Started on Hempland. Clark Copper Shaft all in Ore. Strike in the Greenwater Furnace Creek. Activity General**

**D**EVELOPMENT work has been started by the Kempland Copper Company on its holdings at Greenwater. Six men are now employed driving a tunnel in from the Death Valley slope. It is expected

seen and that, since passing the gossan, the workings have been entirely in commercial ore.

Latest reports indicate that an important strike has been made in the Greenwater Furnace Creek property.

celved here by Mr. Luther G. Brown, his son-in-law. Mr. Clark says:

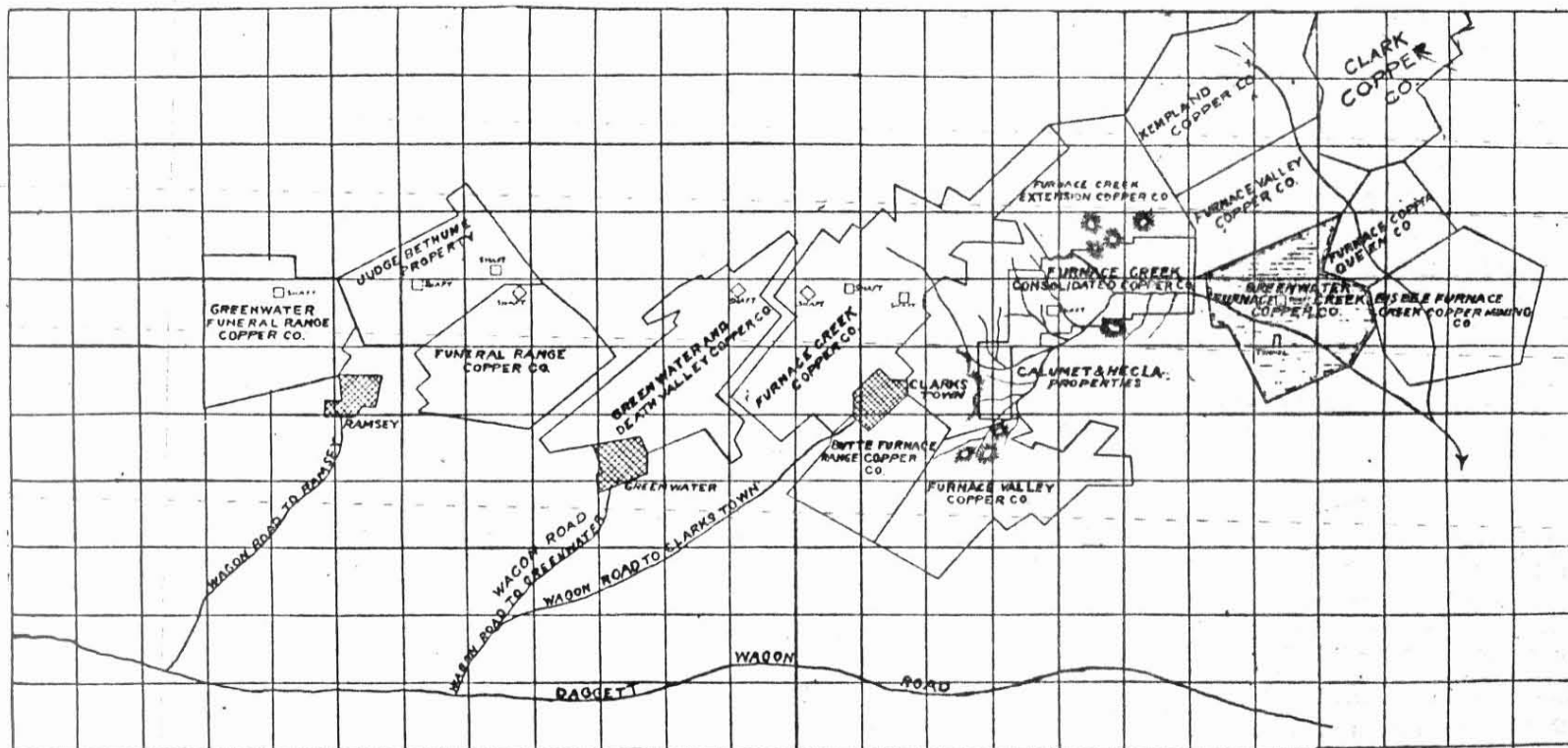
"I have just returned from Greenwater, where I was in nearly every shaft, drift and hole in the district, and am unqualifiedly of the opinion that it will be the greatest copper camp in the World. I took particular pains to examine your holdings in the Greenwater Furnace Creek, and believe that your property will be one of the big ones. The wonderful iron capping on your claims, in connection with the copper, is a

ment on many properties is carried with energy and with remarkably good results.

Two holsts are expected for Furnace Creek Extension, where p  
pect work has been in progress  
some weeks. The showing is con  
ered an excellent one for the amc  
of work accomplished.

The Furnace Valley Copper Company is taking ore from two shafts, some of it very high grade.

Reports have been received that the new district fifty miles from Gr



that the vein will be reached in about 100 feet.

The shaft of the Clark Copper Company is reported to be in high-grade ore, the quality of which is steadily improving. Two shifts are employed. It is stated that no walls have been

SOME OF THE BIG COPPER HOLDINGS AT GREENWATER

though assay returns are not yet available. Mr. H. H. Clark, one of Nevada's most successful mine operators, refers to this in a letter dated at Tonopah, November 13, and just re-

tion with the new find of copper ore found the day I was there, impressed me strongly."

Gasoline hoists are now arriving rapidly in the district, and are being placed without delay. Develop-

water at the north end of Death  
ley, promises well. The veins  
said to carry gold and copper  
of high grade. The district is  
Uba Heba and the report states  
water is plentiful in Deep Sp  
Valley, near the mineralized  
try.

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DEC 1 1906

No. 22

LOS ANGELES, DECEMBER 1, 1906.

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## SOUTH FURNACE CREEK

**Grade Ore in New Greenwater Property. Woods Investment Company of Colorado Springs Interested. Ten Feet of Solid Ore Exposed Near The Surface**

THE SOUTH FURNACE Creek Copper Company will shortly offer an allotment of its stock in Los Angeles. The project is interesting not only for the excellent surface showing of the company's property in the district, but because of the way it is being developed in a business-like and business-like way

and W. H. P. mines, of Cripple Creek, all dividend payers, and other important mining properties in the West.

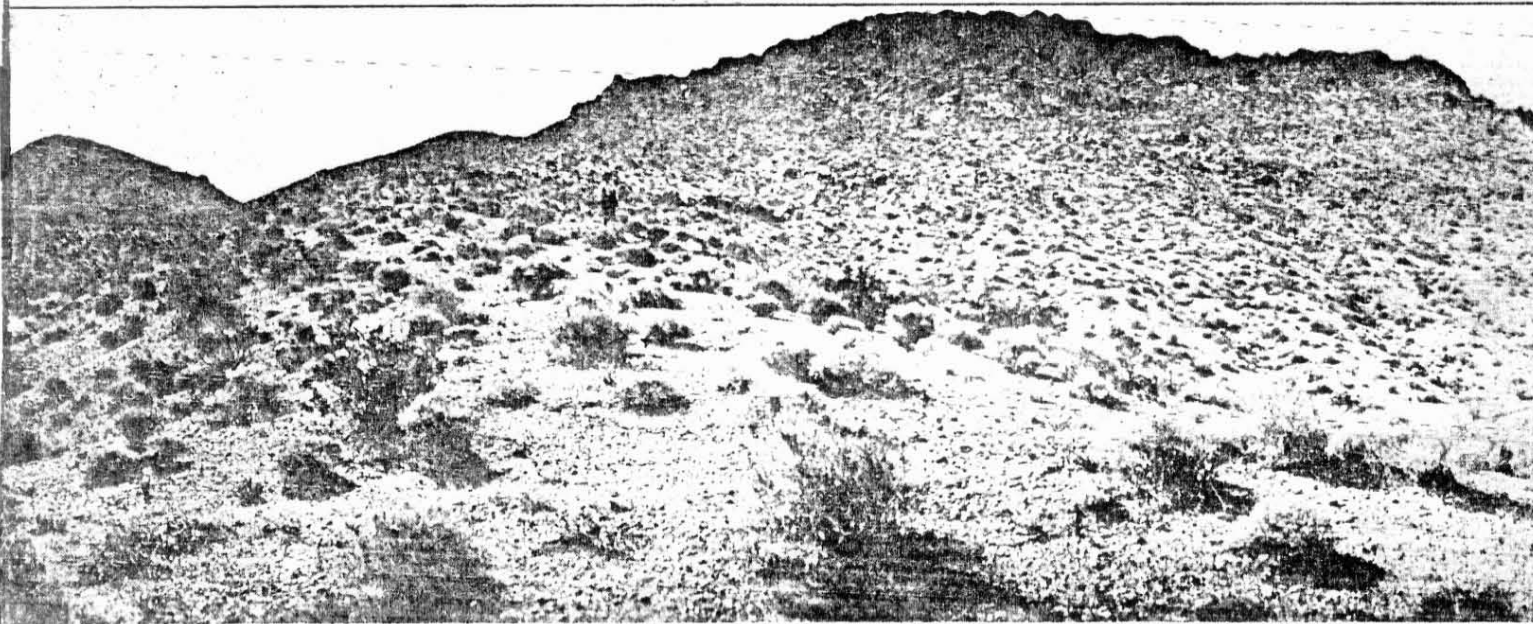
The South Furnace Creek holdings comprise nine claims, situate twelve miles south of the Furnace Creek Copper mine, and on the east slope of the Funeral Range. The survey for the Tonopah and Tidewater Railroad passes within twelve miles of the property. Water for camp purposes is ob-

grade copper ores occur, is as yet of undemonstrated width, but is believed to be about 200 feet wide and lies between granite and silicified limestone. There is, in places, a gossan of porous hematite seamed with copper carbonates, but the chief ore occurrence yet discovered is a well defined vein of copper ore, averaging five feet wide at the surface, and which has in four openings shown solid ore carrying carbonates and red and black oxides. This ore body has been opened to ten feet depth only, and has at that depth been cut across for ten feet with both faces still in ore. It is stated that there is good ground for belief that this body will prove to be continuous for over 1000 feet, and that it is much wider than ten feet. The management

erage samplings from all four openings return from 10 per cent. to 26 per cent. copper. The ore, of which a 500 pound shipment has been received in Los Angeles, is remarkably good looking.

Mr. Woods proposes to make at first a small allotment, and then to list the stock on the Los Angeles Stock Exchange. He is also preparing to register all share certificates with a leading Trust Company here. Proceeds from the first allotment will be used to sink a shaft to 250 feet depth, and for necessary equipment. Further allotments will be made as needed, and at such prices as may be justified by developments underground.

This project is well planned and is



GREAT DIKE ON THE SOUTH FURNACE CREEK

Mr. H. E. Woods and his associates are preparing to launch it. Woods, now of Los Angeles, is known as one of the three principals in the Woods Investment Company of Colorado Springs, which owns the Gold Coin, Wild Horse

tainable within one and a-half miles. From mine to railroad a good down grade road can be broken at small expense.

The mineralized zone, in which high

believes that similar and parallel high grade veins will be found by crosscutting the mineralized zone, and that intervening vein matter is very possibly of concentrating grade. Av-

in the hands of men thoroughly capable, both financially and as miners. It is an almost bare prospect, but if ore is there in such quantity as the surface showing is reliably reported to indicate, a mine may be expected.

DEC 1

DEC 1 1906

DEC. 1, 1906

## Los Angeles Mining Review

### MAYFLOWER CONSOLIDATED MINES

**Important Developments Planned in Riverside County. The Dale District a Valuable Mining Region. The Eldorado Consolidated Making a Great Property. New Machinery Installation**

**D**EVELOPMENTS in the Pinon Range of Riverside county have recently been attracting attention, most notably in the Eldorado Consolidated Company's property. From several reliable and disinterested sources it is learned that the Eldorado discovery, made recently at 150 feet depth, is of the first importance, practically assuring a good future to the mine and offering much encouragement for the development, to like depths, of neighboring properties. Captain John N. White, manager and one of the chief owners, confirms the report that a

southeast of Twenty-nine Palms. The company has title to these claims.

An option has been taken on the Bon Ton group of five claims situated three and one-half miles south of the village of Dale, near the San Bernardino county line, and about twenty miles east of Twenty-nine Palms. These claims have been unusually well prospected by ten shafts, varying from ten to 135 feet deep, several large open cuts, numerous small ones, a drift forty feet long from the bottom of the deepest shaft and a twenty foot upraise therefrom, comprising altogether about 600 feet of work on one vein, but extending over the length of two claims. The ledge is from five to twelve feet wide, carry-

ing horsepower hoist. Captain White states that development will be confined to exploring the known high-grade ore shoot further, and to preparing for extraction a great body of low grade free milling ore which is cut by a deep gulch. This is stated to run from \$8 to \$10. Later a ten-stamp mill will be erected. The company owns a water right in the Dale Water company, assuring it an adequate supply for a mill of this capacity.

In the Dale district, of Riverside county, are now operating the Ivanhoe mine with a 20-ton roller mill, the Supply with five stamps, the O. K. and Brooklin with ten stamps each and the Virginia Dale, until recently supposed to be a pinched out mine, but in which deeper development has exposed a high grade ore body of considerable size. These various mines and mills are supplied by the Dale Water Company. Something over 100 men are employed under ground, and the mines are said to be operating at good profit.

large body of high milling grade, sulphide gold ore has been exposed. There are about 1000 feet of workings from two shafts.

The Mayflower Consolidated Mines company, of Los Angeles, of which Captain White is superintendent, owns the Mayflower group of seven claims, situate two miles south of the Eldorado Consolidated. On this property are several short tunnels and open cuts exposing ore. In a report made recently, Dr. Stephen Bowers, geologist, gives details of development and of the mineralized veins, of which one is narrow and high-grade, sampling \$70.15 across thirty inches, while two are very wide veins of low-grade, free milling ore. The widths of these veins, as given by Dr. Bowers, are fifty feet and one hundred feet respectively. They contain high-grade streaks, but are stated by the manager to average from \$4 to \$8 with bodies of workable size averaging considerably higher. As both veins are cut deeply by gulches, it is planned to quarry them and eventually to mill on a large scale. The water problem appears to be the important one in this case. The Eldorado Consolidated Company is preparing to develop water, and it is understood that an arrangement has been made whereby a pipe line will be run to the Mayflower whenever development shall justify a mill. The property lies about twenty-five miles northeast of Indio, and about fifteen miles

ing pay values in the chief exposures for about four feet of its width. Dr. Bowers, who has examined this property also, gives returns from his sampling of \$40.25, \$30.50, \$51.65 and \$24.25, these being averages in each case. While the development work in itself does not put a great amount of ore in shape for extraction, it is stated that the topography is such that with very little work a sufficient tonnage to keep a 10-stamp mill supplied for a long period can be made available. Concerning this property Dr. Bowers says:

"I find the following favorable features in this group: It is among the older crystalline rocks. The veins are nearly vertical and indicate permanency. Water can be brought in from Dale by gravity. It is easy of access. The development work has been well done. The sixteen assays brought away average \$27.70 per ton.

"A large amount of placer gold has been found here, and there are more or less placers on the claims. The country about these claims has yielded \$80,000 placer gold. About 200 tons of Bon Ton ore was hauled to Old Dale and reduced at a good profit. In the event of your purchasing these claims I would recommend the erection of a ten-stamp mill, which will doubtless yield you good returns."

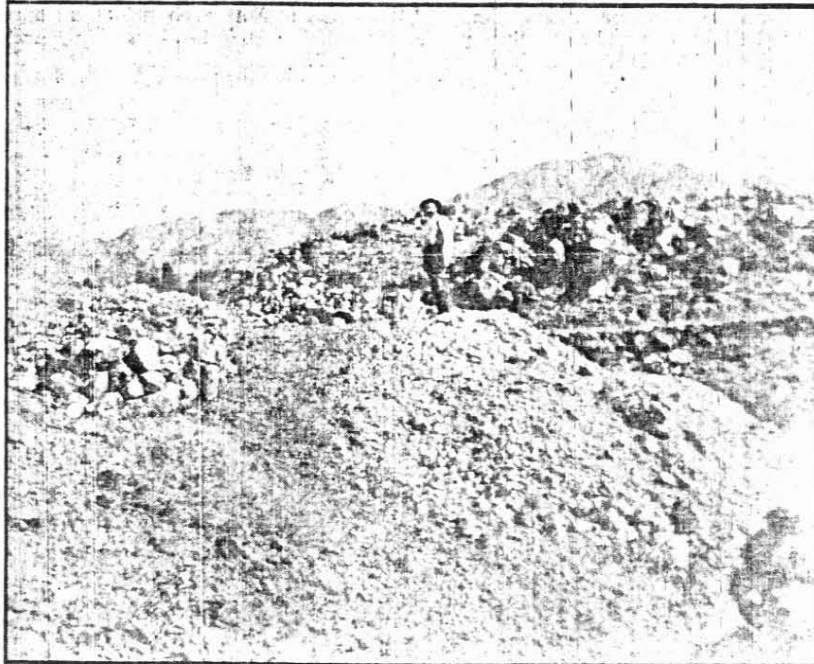
The Mayflower Consolidated Mines company now proposes to close its option on this property by purchasing it outright, and to install at once a two drill compressor plant and a 20-



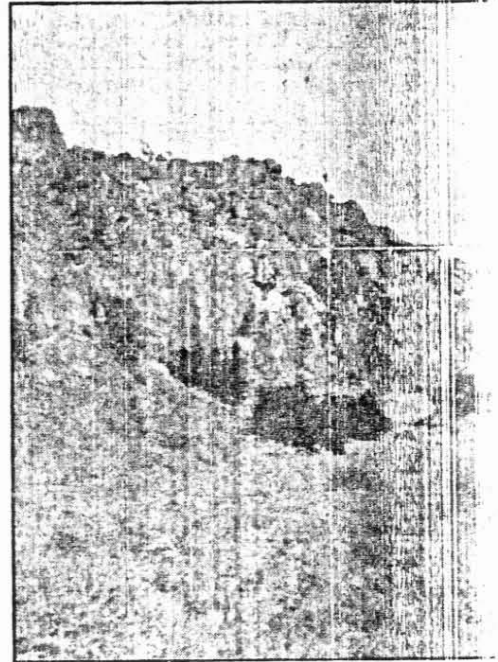
# Los Angeles Mining Review

DEC 1 1906

DEC 1



DUMP OF THE MAYFLOWER, RIVERSIDE COUNTY



GREAT LOW GRADE LEDGE ON

DEC 1

# THE STANDARD MINES.

Reliable Report that Much Ore is in Sight. Vertical Shaft Nearing the Vein. Other Developments in the Cima Copper Belt.

**A**N ENGINEER well known to this paper, and whose estimate of mines and prospects is perhaps unusually conservative, returned this week from an examination of the copper belt north of Cima, San Bernardino county, where are the Standard mines and the copper claims now under development by Quartette Mining Company interests. He was very favorably impressed by the showings, both surface and underground.

Concerning the Standard mine, with which he has no connection but which he inspected through the courtesy of the superintendent, he said:

"This property is a very promising prospect. The ore occurs in high grade lenses and chambers within the vein, which is in a contact of granite, and lime. Some \$50,000 worth of ore has been shipped by the company, and there is fully as much blocked out and ready for shipment above the 200-foot level. At the same time, the company is sinking a vertical shaft in the hanging wall country rock. This is an excellent piece of work. It should cut the vein at from 350 to 400 feet depth and already, at something over 300 feet, is encountering small stringers of ore.

"The Standard vein is a wide one, the ore is of excellent quality for smelting, and in the lower workings is beginning to carry some glance. I consider the Standard a great prospect, and think that it will make a mine."

The Standard Mines Company has figured in the courts of late in an unfortunate way, the management having been questioned by certain stockholders. So far as we can learn, the mine is one of exceptional promise for the amount of work accomplished. The vertical shaft should be put down to the vein. It is believed by competent engineers that an important sulphide ore body will be opened at four or five hundred feet depth.

The shaft which the Quartette people are sinking is now down about 150 feet, and is reported to be in good copper ore. The new owners are making the purchase payments regularly, and expect to develop an important property.

The Alta Crown Copper Company, owning five claims near the Standard, and the Gossan Copper Mines Company, owning four claims in the same region, have been formed by Messrs. James Lewis, W. G. Campbell and J. F. Campbell of Spokane, Washington. It is their intention to develop both of these groups extensively. From the Alta, five cars of high grade have been shipped. The ore is in a porphyritic belt lying between granite

and limestone, and is cut across by a felsite dike. The formation and indications are considered very favorable for a big property.

We have heard much that is good recently, of this copper belt near Cima, and from engineers of standing in the copper mining world. It is a region well worthy of careful investigation.

DEC 1

## THE CARGO MUCHACHO

**A District of Large Ore Bodies, But Not a Poor Miner's Paradise. Sketch of Its Famous Mine, the Golden Cross**

(WRITTEN FOR THE MINING REVIEW)

**T**HE CARGO MUCHACHO mining district in the southeastern part of San Diego county, California, is one of which but little is heard in these days of strenuous mining. A good deal was said of it and printed about it some twenty years ago, but its fame is chiefly confined to the fact of its being the possessor of the Golden Cross mine—which has a history of its own, the recital of which would explain how a great mine can be operated for the benefit of lawyers instead of owners—

but that, as Kipling would say, "is another story."

The formation of the Cargo Muchacho district is in some respects similar to that of the Arizona side of the Colorado River except that the ore bodies are, individually, of greater extent and of lower grade. The district is not a poor miner's paradise; it is one requiring large expenditure of money in development, and large reduction works.

The Golden Cross mine is an immense body of low grade gold ore, averaging \$3.60 to \$4.00 per ton in gold, easily mined because of its being a great mass of rock that can be pulled down and put through the mill without sorting, all of it carrying values. The initial installation on the property was a mill of 20 stamps, to which twenty more were soon added, followed by the construction of another mill of 100 stamps, which made it during several years the largest stamp-mill in California.

The Golden Cross is situated at the head of a small valley in the Cargo Muchacho mountain, four and a-half

miles north of Ogilby, on the Southern Pacific railroad.

The mine is on a vein running nearly north and south—a contact vein between syenite and schist. The vein is quartz and carries gold, silver, copper and a little mercury. The Hedges Brothers worked this vein for about twelve years with the 40-stamp mill which made good returns.

After the new 100-stamp mill was installed, however, it was realized that the mine workings had been designed for smaller capacity, that there was not room enough for a sufficient force below ground. Payments because delinquent and there were disagreements among the owners over the question of management. The mine was taken into the courts, where it remained for several years, operated under the management of a Receiver appointed by the Superior Court of San Diego county. Mr. Pauly was the Receiver, and under his wise administration the mine paid off the debts incurred in litigation, while also making handsome profits.

About that time Colonel Isaac Trumbo, of Salt Lake City, appeared on the scene; secured an option on the property, organized a new company and made Mr. "Sam" Shortridge, of San Francisco, its legal adviser—nor was the job one of the worst, in a pecuniary sense, that Mr. Short-

packed the mine off to London, with the intention of unloading it on British capitalists—and which he nearly succeeded in doing for the sum of six million dollars. That he did not succeed was largely due to an article in the Los Angeles Mining Review in answer to one printed in the Financial News of London, in which it was pointed out that the sum of six million dollars asked for the property, was in excess of what the property was then worth. This having reached London just before the sale was to be consummated, the intending purchasers undertook further investigations, with the result that they declined to give six million dollars for the mine, and the deal fell through.

The fact that the Golden Cross mine was not unloaded in London at this great figure must not be interpreted as meaning that the mine is, or was, devoid of value. It is learned from an engineer of excellent standing, who has recently examined it,

that there are in sight large reserves of low grade ore which should be worked at good profit.

The property is now clear of debt, and it is understood that it will shortly be opened again as a milling and cyaniding proposition.

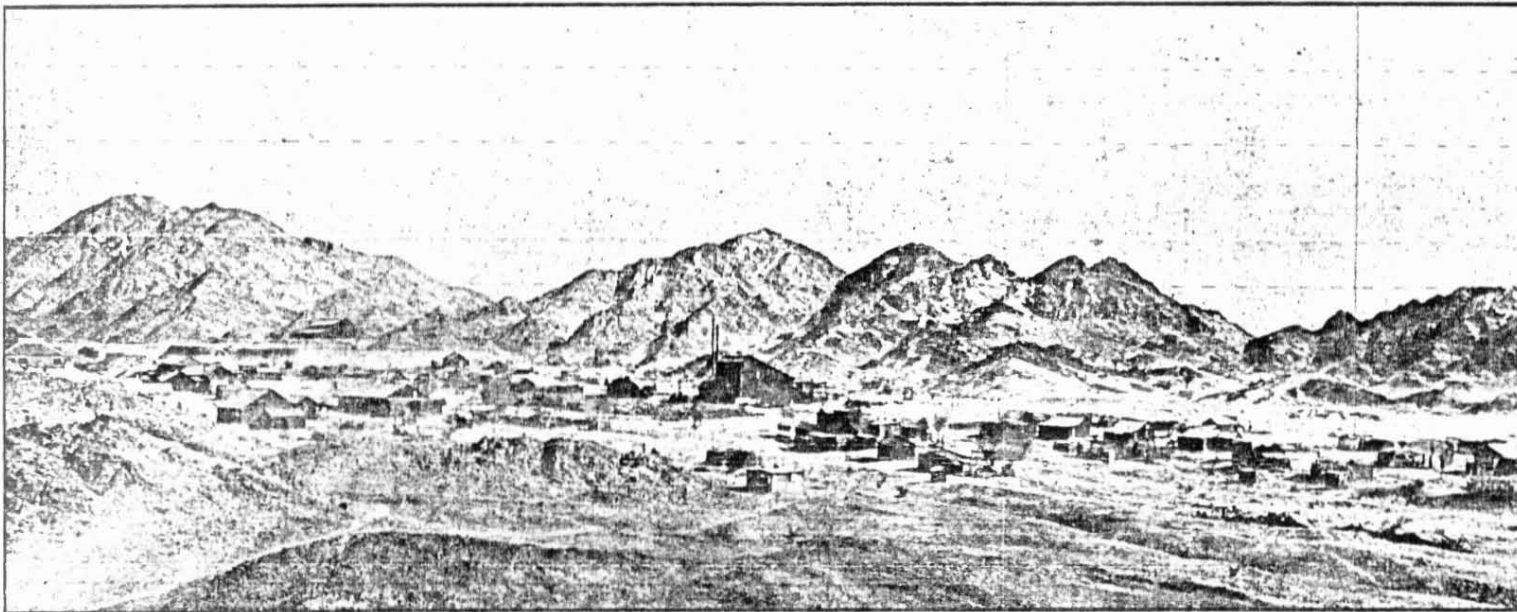
The mill is supplied with water from the River Colorado by a pumping station below Yuma and a thirteen-mile pipe line, delivering an ample supply for all purposes.

Los Angeles Mining Review

DEC 1 1906

Dec 19, 06 (3)

DEC 1



IN THE CAROO MUCHACHO DISTRICT, SAN DIEGO COUNTY,

DEC 1 1906

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DEC 8

## BIG WORK AT GREENWATER

**Schwab Mines to be Opened on Extensive Plan. Greenwater Furnace Creek and South Furnace Creek. Clark Copper in Rich Ore**

**V**ERY IMPORTANT developments, involving some 6000 feet of shaft and drift work, have been outlined and will shortly be undertaken by the Greenwater and Death Valley Copper Company, in which Mr. Charles M. Schwab is the chief shareholder.

The company is sinking five shafts, of which the deepest has reached 140 feet vertically. The shaft was started in the hanging wall country rock and entered the vein at thirty-four feet.

At eighty-two feet it passed out of the vein, having shown twelve feet (estimated at right angles to the walls) of high grade copper carbonate ore.

The four main shafts are known as Queen No. 2, Glance Nos. 2 and 5 and the Junction. These are to be put down as rapidly as possible to about 300 feet each, and connected by drifts running from Glance No. 2 to Queen and Glance 5, and from the Junction shaft to Queen 2 and Glance 5. From these main galleries, which will form a great diamond, the ground will be thoroughly crosscut. Three of the company's shafts are now equipped with gasoline hoists, and the others

are to be immediately so. A 90-horse-power compressor plant is to be installed.

Mr. Arthur Kunze, who is heavily interested in this property and is also concerned in its management, arrived in Los Angeles early this week. For publication in the Mining Review he said:

"The Copper Queen vein is about sixty feet wide and crops boldly, so that it can be traced without difficulty for 4500 feet east and west. This vein is in a contact fissure between diabase and rhyolite. Crossing it are many great fissures in which are ande-

site dikes carrying copper ores. Some of these dikes are very wide and are seamed with veins of high grade, the intervening rock being enriched in varying degree. Very large bodies are however, of good smelting grade. The plans for development are now fully determined upon, for a while at least, and we believe we shall open one of the greatest copper producers in the World."

Concerning other Greenwater properties in which Los Angeles people are heavily interested, Mr. Kunze said:

"The Clark Copper Company has an excellent showing on very promising ground. Development has already exposed high-grade ores and from the character of the croppings it can

hardly be doubted that there is very extensive mineralization.

"Greenwater is a district of immense ore bodies, of which portions are high-grade. There will, when sulphides are reached, probably be great tonnages of concentrating grade, besides important zones of secondary enrichment. This may be guessed at from the great gossan cappings.

"Some of these latter are black and some red. The red gossan is proving to be very good, though by some it was at first thought less of than now. On the United Greenwater, for example, a three compartment shaft was put down through red gossan and is now all in solid high grade ore.

"Another property of this character is the Greenwater Furnace Creek, with one of the great surface showings of the district. The red gossan is immense and is seamed and veined with

carbonates. The company is developing actively and has made some very promising exposures. This is similar to a portion of our ground where, over several acres, we sampled the surface thoroughly and after throwing out all good looking pieces got an average return of 2½ per cent. copper. The porous red iron gossan, in that district, seems to be the leached residue of ore that was particularly rich."

It is learned that the Greenwater Furnace Creek Copper Company, after extensive surface trenching and other prospect work, is now concentrating all effort upon the tunnel, in which three shifts will from now on be worked, and which is headed for what is

expected, from surface indications, to be a great ore-body. Shaft work has been suspended on account of the heavy snow-fall. The tunnel is in forty feet and the face, by latest advances, showed stringers of ore and spar. The vein should be reached at about 100 feet below the surface.

It is learned from Mr. J. Ross Clark that recent development at Clark Copper has continued to show ore of excellent grade and in quantity.

Mr. B. K. Brockinton, a shareholder in the South Furnace Creek Copper Company, and who is also largely interested in The Kempland Copper Company, with the Clark interest, arrived in Los Angeles from Greenwater on Monday last.

Mr. Brockinton reports that work upon the Bonita group of the South Furnace Creek Company is opening up a remarkable showing. Large

masses of copper ore of good grade are being broken, and if the vein is shown to be the full width of the dyke, some 200 feet, it is believed that South Furnace Creek will be classed with Furnace Creek Copper and the Schwab mines.

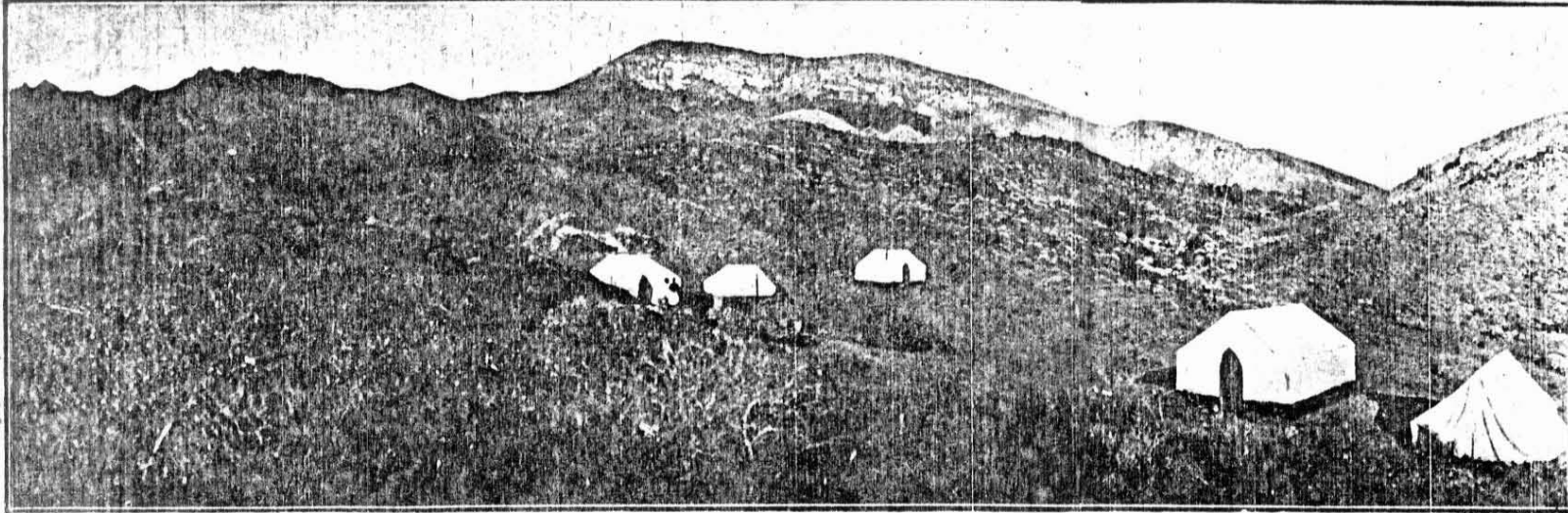
Senator Dupont, the millionaire powder manufacturer of Delaware, has taken over the Key's property, about three miles west of the Bonita, and has shipped over the Tonopah and Tidewater railroad a car of supplies, together with twenty-five Colorado miners from Denver, in charge of Messrs. Klittridge and Peck. The South Furnace Creek and Dupont properties, both in strong hands, will be important additions to the going concerns in the Greenwater district.

DEC 8  
1906

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12-8-06 (5)

12-8-06 (5)



CAMP OF THE GREENWATER FURNACE CREEK COPPER COMPANY

DEC DEC 8

DEC 8 1906

# Los Angeles Mining Review

## THE BAGDAD-LUDLOW MINE

**Los Angeles Company to Develop in Rich District.  
The Famous Bagdad Chase, San Bernardino  
County Mine Where Gold Ores Are Quarried**

**T**HE BAGDAD-LUDLOW Mining and Milling Company of Los Angeles has leased, for a term of five years, the property of the Ludlow Mining Company, situated in the Buckeye district nine miles south of Ludlow, San Bernardino county, California. The company also has the privilege of purchase at any time within the five year period. By the terms of the lease all payments made apply on account of purchase, and it is stipulated that rental shall at no time exceed net profits of operation.

The property comprises twenty nine claims in a group which adjoins the Bagdad-Chase and Roosevelt properties to the west. It is a prospect, with what is said to be a very excellent surface showing and considerable development which has, owing to imperfect understanding of the system of faulting, failed to develop the mine as planned.

The great mine of the district is owned by the Bagdad-Chase Gold Mining and Milling Company, in which are interested Senator Depew of New York, Mr. H. N. Van Etten, of the New York Central R. R., Messrs. C.

B. Chase and J. M. Beckley of Rochester, New York, and other capitalists, the shareholders together representing many millions. The property is opened by ten or more shafts, several of which are fully equipped. The main shaft has been sunk to a depth of over 500 feet.

Development underground has been extensive and has exposed very valuable ore bodies of good milling grade. The company has built a railroad from the mine to Ludlow, on the main line of the Santa Fe Railway, and has for some years past been shipping ore to its 50-stamp mill and cyanide plant at Barstow at the rate of 120 tons a day. It is stated that the Bagdad and Chase mines have yielded about \$4,000,000 in bullion, and that several millions are blocked out. The company has for some time past been quarrying ore from an immense open cut.

The Roosevelt mine is quite extensively developed and is reliably stated to contain very large bodies of

ore carrying good gold values with very rich pockets of copper carbonate and glance. The last available report on this property states that drift work to 300 feet north and east on the 200 and 300-foot levels, shows an ore body averaging over 20 feet in width

with average values of \$10 to \$15 per ton. Between the 100 and 200 levels the ore body is said to be 20 feet wide and for 200 feet in length shows milling values. A 10-stamp mill was built at the Roosevelt over a year ago, but has never made more than a test run, the property having been under option of purchase.

Among other properties in the district are the Ludlow Bell, on which a mill has recently been built, the Evening Gold, the California-Virginia and the John Suter. Upon these considerable development has been done with good results.

The Buckeye district has suffered the usual reaction from over-booming but is now, on account of substantial merit, emerging from its period of depression. The veins are strong, outcropping boldly for long distances. The vein matter is brecciated quartz and porphyry carrying gold values and, in places, copper carbonates, red oxide and glance as depth is reached. The general formation is granite and porphyry. The district was discovered in 1889 by Mr. John Suter while searching for water. He made numerous locations which he sold to the Bagdad Mining and Milling Company, and to other companies. The town which has sprung up near the mines

is called camp Rochester, and promises to be a substantial place.

The Bagdad-Ludlow Mining Company now proposes to develop extensively the Ludlow ground, which lies in the heart of the Buckeye or Bagdad district. It is the intention to

put the mine in condition to start later to build a mill. The main vein of the property, which is believed to be a continuation of the Roosevelt vein, crops boldly and is very rich, carrying, over a considerable area, pay values at the surface stated to run from \$10 to \$40. The management intends to quarry these ores, the topography being favorable, and to ship the better grades to the Newell Smelter to which a low rate is quoted by rail. It is believed that, in this way regular and considerable shipments of \$25 ore can be made.

The president of the Bagdad-Ludlow Company is Mr. S. S. Watson, of Los Angeles. Mr. Henry J. Pauly, of the H. J. Pauly Company, is vice-president. Mr. John Castera, vice-president of the International Savings and Exchange Bank, is secretary and Mr. J. F. Conroy is treasurer. Mr. Charles Castera completes the board of directors. The company has started development work and is also sinking a deep well to secure an adequate water supply.

Dr. Theodore B. Comstock has recently examined carefully the country south of the Buckeye district, and is very favorably impressed by the formation and by several properties. He states that that portion of San Ber-

nardino county is very rich in metals and should justify a railroad, as there are good indications that values will go deep.

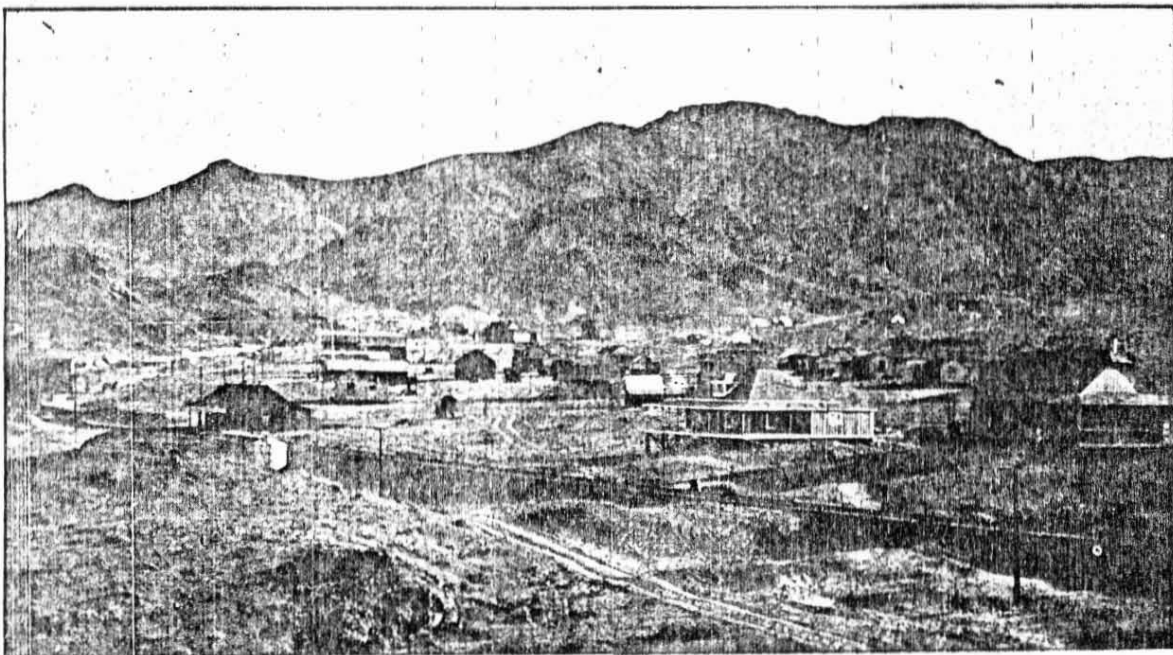
DEC 8

Los Angeles Mining Review

DEC 8 1906

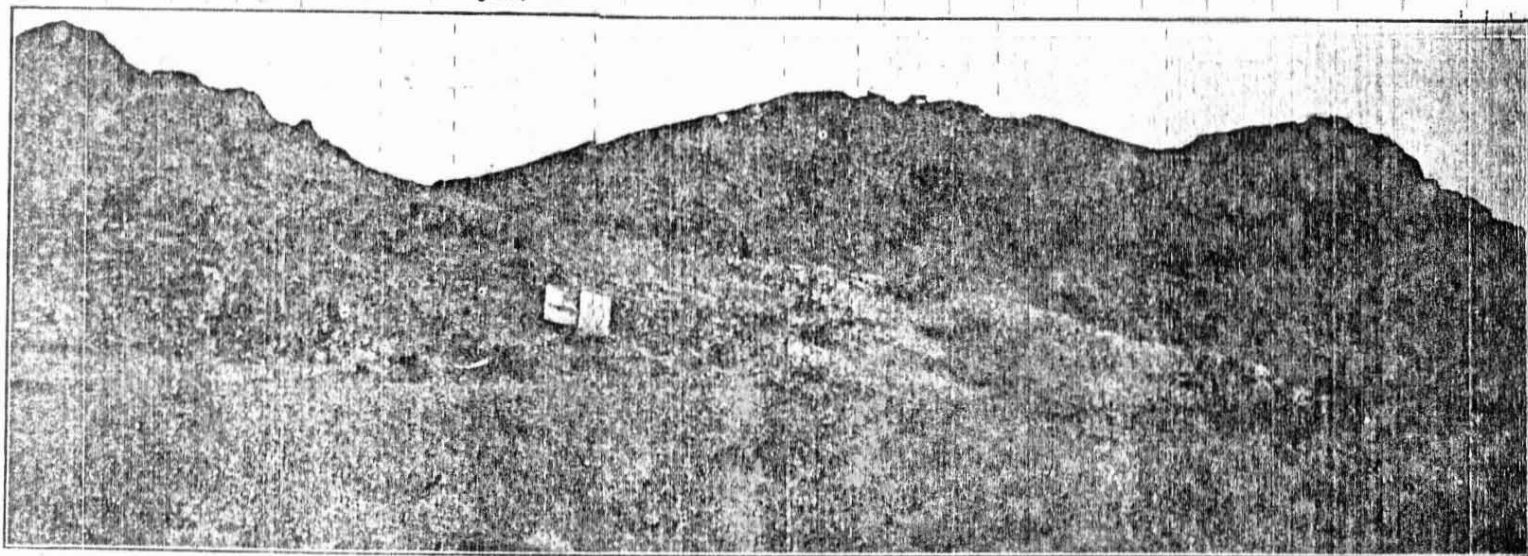
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CAMP ROCHESTER, HUCKEYE MINING DISTRICT

DEC 8



GREAT CROPPINGS ON THE LUDLOW

12-8-06 (9)

12-8-06 (6)

12-8-06 (5)



DEC 15

DEC 15 1906

8

DEC. 15, 06

## Los Angeles Mining Review

## DEVELOPMENTS AT GREENWATER

**Clark Copper in High Grade Ore. Greenwater Furnace Creek Progress. South Furnace Creek to Begin Development. Other Properties**

**T**HE SOUTH FURNACE Creek Copper Company will start development with a force of six men at the mines on Monday next. The secretary of the company, Mr.

sinking the Copper Blue shaft to water level. The shaft is now 385 feet deep. No crosscutting will be done until water level, wherever that may be, is reached and passed, as the management is confident from expos-

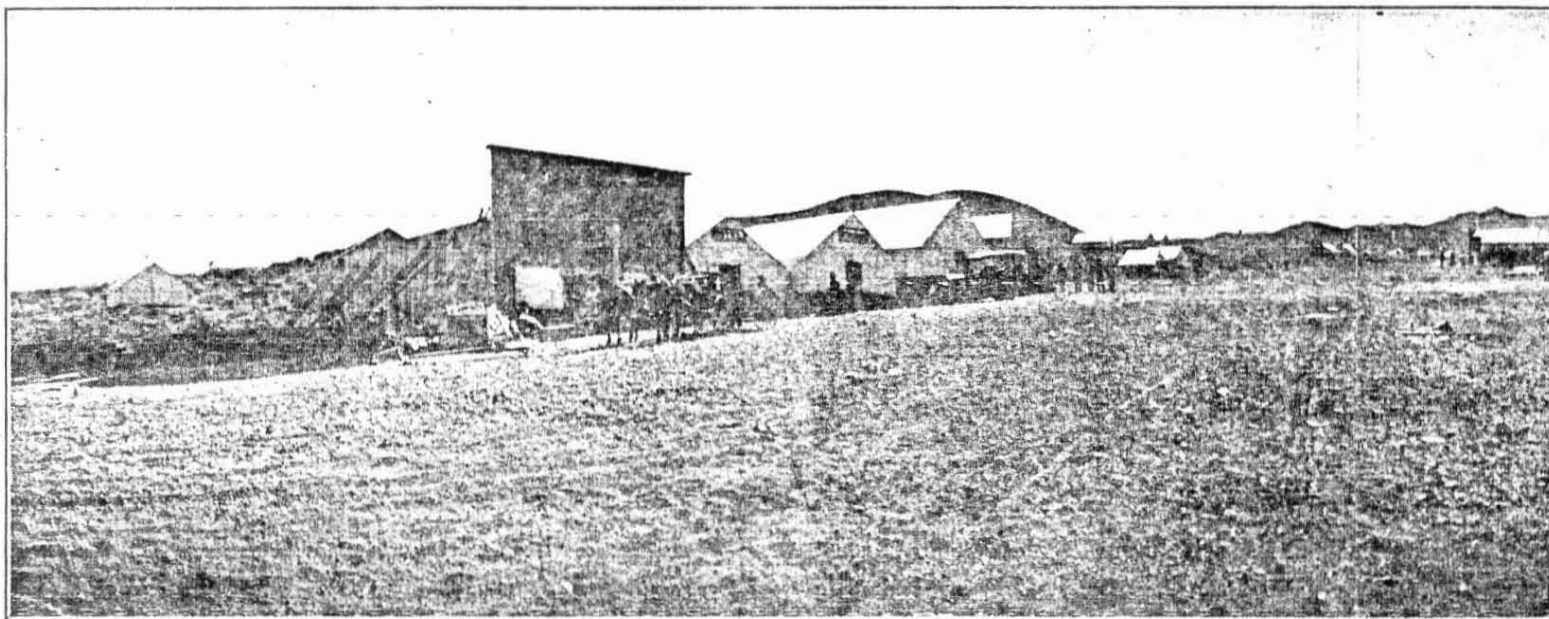
ter ore as sinking progresses. The whole shaft is now in ore with no walls or limits showing. The ore exposed runs from 8 to 18 per cent. copper with an estimated average of 12 per cent. Work was suspended during the recent snow storm, but has now been resumed.

On the Kempland copper property, a tunnel is rapidly being driven to reach the vein at about 150 feet depth. The face is still in country rock.

Development of Greenwater Furnace

in the district, and that development now under way should open similar ore bodies to those discovered by the older companies under like conditions. The stock is now held by the company at fifty cents. The company has followed a conservative policy in selling stock set aside for development purposes before listing, at the same time giving a definite agreement to list within a stipulated time. It is stated that the present allotment will be closed out before the first of the year,

DEC 15



L. R. Myers, leaves today for Greenwater to oversee the work.

New shafts will be begun at favorable points upon the property, and a definite conclusion reached as to a contract on the main workings, which have shown up well during recent development.

The Furnace Creek Copper Company has stopped all work in the 250-foot crosscut, and drifts therefrom, and is

THE TOWN OF GREENWATER, INYO COUNTY, CALIFORNIA

ures made in the 250-foot drifts that enrichment is from deep sources, and that very large sulphide ore bodies will be found below water level which is expected somewhere between 500 and 1000 feet.

It is learned from Mr. James Harvey, manager of the Clark properties at Greenwater, that the Clark Copper Company's shaft is showing bet-

Creek is proceeding steadily with no change, the tunnel having yet some distance to go before the vein can be reached. Much surface work has been done, the showings having been of a satisfactory character. It has been stated by several prominent mining men of Greenwater who have examined this property lately, that surface indications are among the best

when the stock will go on the exchange. Out of the capital stock of 1,500,000 shares, 1,000,000 shares are pooled until July 1, 1907, and 350,000 shares remain in the treasury.

The working capital, as now being provided from the balance of the issue, is considered ample for development of the mine to a point where, if expert opinion proves correct, the treasury stock will have a much enhanced intrinsic value.

DEC 15 1906

DEC 15

## THE CALIFORNIA HILLS PROPERTY

**San Bernardino Gold Discovery of Much Promise.  
Backed by Strong People. Sensational Ores. Will  
be Extensively Developed**

IN FEBRUARY and March of this year, Messrs. McClure and Yarbrough discovered a series of high-grade veins in the Goldbend mining district, to the southwest of Needles, San Bernardino county, California, and on an almost direct north and south line with Searchlight. Among the veins discovered was the Gold Dollar from which several shipments have been made. It is stated on reliable authority that ore running as high as \$1100.00 to the ton was taken from this vein.

During last summer a lot was run from the works of the Arizona Mexican & S. Co., Needles, which returned nearly 13 ounces in gold to the ton, or \$260.00. At the grass roots an average across two feet of ore returned \$68.00 to the ton, and at twenty-five feet depth a considerable body of ore running \$200.00 has been disclosed. The main shaft has been sunk to a depth of sixty feet. A second shaft has been started to the south, 200 feet distant, and ore running as high as \$65.00 gold is shown in a ten foot hole.

Pay ore has been opened on the Gold Dollar main vein for nearly a thousand feet, and two parallel veins show extraordinary pinnings of gold. The California Hills Company has taken over the Gold Dollar group, and is now preparing to make the mine after the most improved Colorado methods.

The Goldbend district, in which is situated the Gold Dollar property, has many advantages over the ordinary desert mining camp, in that good wa-

ter is found within two miles, and there is an excellent road from the smelter at Needles direct to the mines.

There are a number of other promising properties at Goldbend and under the direction of U. S. Deputy C. R. Caudle, the townsite of Goldbend is now being platted. The ores of this district are of high grade and there is every evidence of permanency shown as development work progresses. Mr. H. M. Phinney, of Cripple Creek, has been placed in charge of mining operations at Goldbend.

Mr. H. E. Woods, of the Woods Investment Company, Colorado Springs, is chief in interest in the California Hills Mining Company, which is listed on the Los Angeles Stock Exchange.

### COPPER STILL RISING.

The best Lake Superior copper is no longer obtainable at 22½ cents even for well advanced months. The sellers who have been trying to hold the market down now say that demand is so clearly ahead of supply as to make the producers powerless.

In its "Production of Copper in 1905," just at hand, the United States government, after estimating the country's output at 901,907,843 pounds of copper, predicts an increase for the year 1906 of at least 70,000,000 pounds, thus placing the current year's production at above 970,000,000 pounds.

A Michigan mining president says: "The market for Lake copper can be fairly quoted at 22½ @ ¼ cents a pound, sales having been made at both these levels. I fail to see how the metal can be held down to these

prices and believe that ultimately still higher figures will rule. In response to an inquiry I have named 23 cents as the price for some of my product." Other companies are also disposed to wait for this price before making any further contracts for future shipments.—Boston News Bureau.

### SALT LAKE EXTENSION.

A dispatch from Salt Lake City, printed in the East, states that announcement that the San Pedro, Los Angeles & Salt Lake Railroad would build a branch line into the Deep Creek mining region in the western part of the State has been followed by the filing of the official surveys in the Federal land office. It is further stated that the road will leave the main line somewhere near Tintic Junction, taking a westerly course and cutting close to Fish Springs, the location of the Utah mine, and that the new road will not stop in Deep Creek, but will push on to Ely, Nevada.

Mr. J. Ross Clark states to the Mining Review that nothing has been yet decided in this matter. The plan to build to Deep Springs is under discussion. An extension to Ely has not been considered.

### Dr. J. Grant Lyman.

A gigantic mining stock swindle, from which Dr. J. Grant Lyman, of New York, is declared to have realized \$300,000 within 30 days, was uncovered in Goldfield, Nevada, recently by the arrest of E. H. Latimer, his secretary, and the statement is made by Sheriff Bradley that he has wired instructions to the chief of police at Pasadena, California, to apprehend Lyman. Over the name of the Union Securities Company, Dr. Lyman announced the incorporation of the Boston Green Water Copper Company, publicly stating that the property had cost \$200,000 cash and that he was offered \$400,000 for it; that Augustus Heinze had subscribed for \$100,000 worth of stock; that 430,000 shares were taken

DEC. 15, 06 (?)

## GREAT SMELTER FOR GREENWATER

**Greenwater Furnace Creek Approaching Ore Body. Well Sunk for Water Opens Big Copper Vein. Tonopah and Tidewater Rapidly Approaching Camp. Schwab Interests Will Build Smelting Plant.**

**I**N A LETTER received yesterday, Major J. W. A. Off of the Greenwater Furnace Creek Copper Company states that the company's crosscut tunnel is in forty-five feet and that the face is in mineralized country rock seamed with high-grade copper carbonates. Mineral has been increasing rapidly since the last report, and engineers who have examined the face believe that a strong and rich ore body will be penetrated within the next fifty feet. Major Off has made some changes whereby the work of development will be

facilitated. An average grab sample from the crosscut dump, taken last week, yielded  $2\frac{1}{2}$  per cent. copper. As the material was mineralized country rock only, this is considered an excellent indication that such enrichment must have come from an ore bearing vein of importance.

The well now being sunk for water in the flat, half way between Ramsay and Greenwater, reached a depth of 250 feet last week. At that depth a

vein of high-grade copper ore was struck which has since been penetrated for twenty-five feet. The bottom of the well is still in ore. This is considered a find of particular importance, because it shows that the ore bodies extend under the flat for a long distance. It adds to the prospective value of several properties, besides extending the known mineralized country very materially.

The town of Greenwater is to be moved to Ramsay, but the name "Greenwater" will be retained. There are now over a thousand people permanently in the district.

A dispatch from New York states

that a merger of the various Schwab properties, the Greenwater and Death Valley, the United Greenwater and others has been effected. It is stated also that Mr. Schwab and associates have perfected plans to erect a large smelting plant at Ash Meadows, Nevada, and to build a railroad from Greenwater to that point. The new company will, through its directors

and shareholders, be in close sympathy with several very strong mining companies in the Tonopah, Goldfield and Bullfrog districts, and expects to control a great ore tonnage. Ash Meadows is on the line of the Salt Lake Route and will be reached by the Tonopah and Tidewater early next summer, giving close connection with Los Angeles by two lines. Thereafter the Greenwater, Bullfrog, Goldfield country will be competitive territory as from Los Angeles, but not from Salt Lake City.

The new company will have eleven directors. Six of these will represent the interests of Charles M. Schwab and Donald B. Gillies, who control the Greenwater and Death Valley; three will represent the Nevada Smelting and Mines Corporation, which at present controls the United Greenwater, and three will represent the Philadelphia interests. The Schwab directors so far as elected are Charles M. Schwab, Donald B. Gillies and M. R. Ward; those of the United Greenwater are Malcolm L. MacDonald and Leonard A. Dessar, and for the Philadelphia party John Brock, Frank Keith and Charles R. Miller. Messrs. Gillies, Ward and Miller are also directors of the Nevada Smelting Corporation. John Brock is president of the Tonopah Mining Company, Charles R. Miller is its vice-president and Frank Keith its general manager.

It is learned from Mr. John Ryan, general manager of the Tonopah and Tidewater Railway, that his road will reach Rhyolite, Nevada, by July 1, 1907, and that on or about May 1 trains will be running to a point sixteen miles east of Greenwater. A good down grade wagon road, suitable for ore haulage will be available from the mines to the new railway.

The line is now completed seventy-five miles out from Ludlow, on the main line of the Santa Fe in San Bernardino county. A force of 800 teams and some 900 men is employed on construction, which is proceeding rapidly. The big fill in the Amargosa Canyon is now nearly completed.

This railroad was first undertaken to provide an outlet for the borax works in Death Valley and with a very dim idea of the mineral wealth which would so soon be developed in its ter-

ritory. Concerning this Mr. Ryan said:

"Almost from the beginning of the line, valuable mining property has been discovered. It was just ten miles north of Ludlow that some of our graders discovered a copper prospect, on which they did a little work—just a small hole. Last week they sold out for \$11,000 cash.

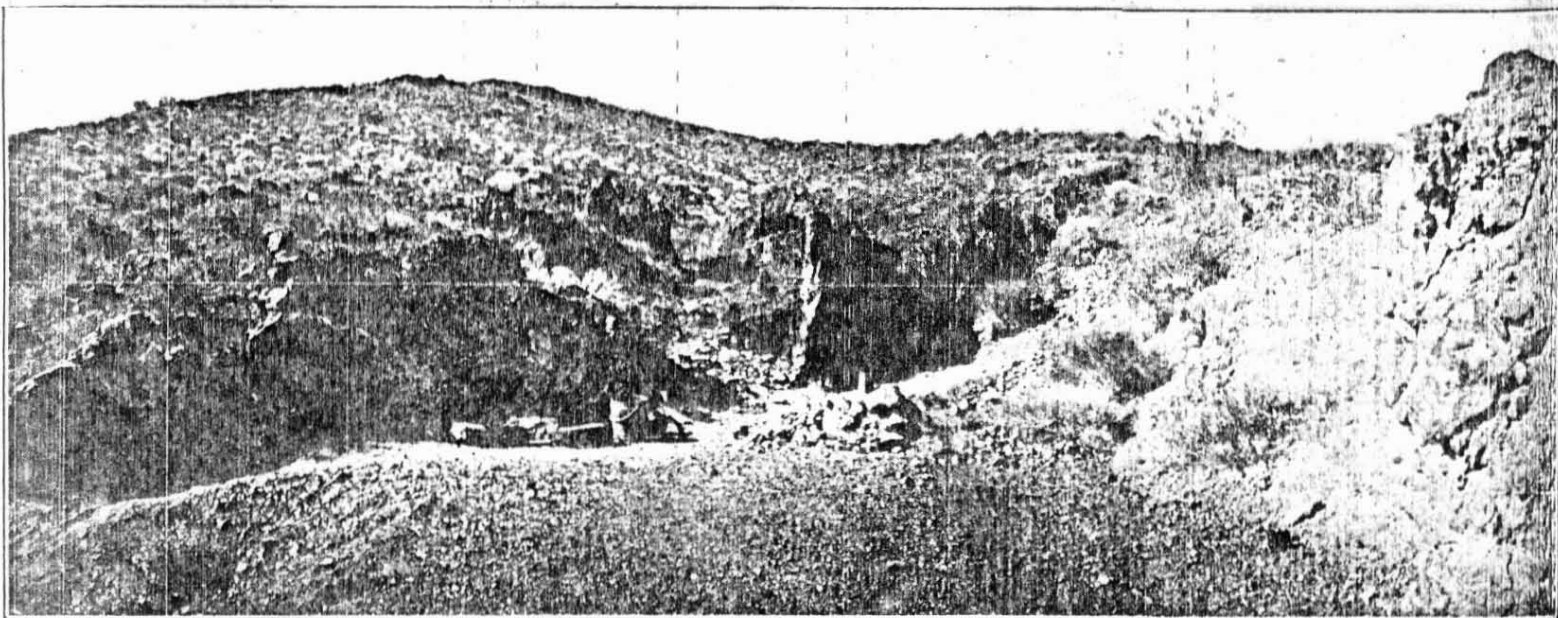
"At Silver Lake there are reported to be big low grade copper bearing dykes which promise to make money. North of this is a great deposit of natural cement on which a plant of 100 barrels daily capacity is to be built in the near future. Near Alta, the next station, are the Riggs mines in the Silurian Mountains. These carry bonanza silver ores. From Ludlow to Dumont, the present terminal, the country is full of prospectors and they are making valuable finds—many of them.

"Ten miles beyond our present front are the Tecopah mines, in which so much development work is in progress with thirty men. Ore is being shipped regularly, and between 2000 and 3000 tons are now piled up in sacks at a right of way waiting for the trucks and cars. That is going to be a great ore producing country right from Ludlow to Greenwater and beyond. We started the road to haul borax. Before we get it done it will be an important ore road. You ought to get a smelter here to reduce those bix. If you don't the money they bring will be spent in other places."

The Tonopah and Tidewater Railway Company has filed its survey in Greenwater. The Salt Lake people are about completing their survey to the camp.

DEC 22 1906

Dec. 22, 06 (5)



BOLD OUTCROPPING ON THE GREENWATER, FURNACE CREEK PROPERTY



DEC 29

DEC 29

## THE GREENWATER DISTRICT

**Strike of Importance in Kempland Copper. Big Scheme of Development. Greenwater Furnace Creek Tunnel Approaching Ore Body. South Furnace Creek Development**

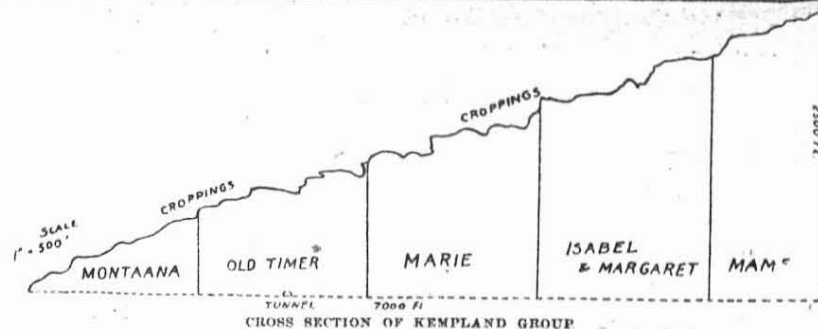
**T**HE KEMPLAND Copper Company's crosscut tunnel has struck the vein at 180 feet. The face is now all in ore, stated reliable advices to average 12 per cent. copper.

This crosscut was started on the Death Valley slope below a steep escarpment. It is stated that there are

about 200 feet of backs over the new strike. The ore exposed carries carbonates and glance.

The company now proposes to drift north to the Clark Copper line, which will give an estimated depth of 2500 feet. A drift will also be run south to daylight under a considerable hill believed to contain good ore bodies.

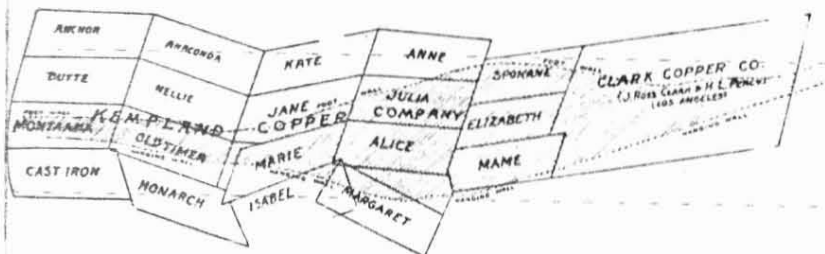
The east wall of the Kempland vein



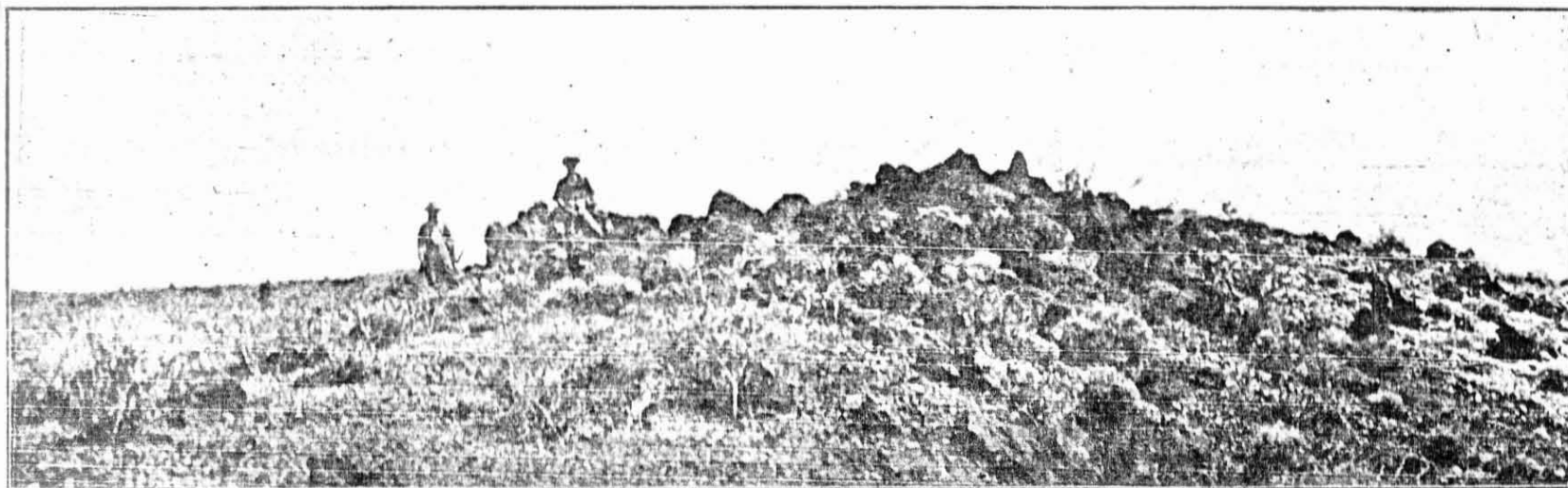
or deposit is very well defined, erosion having in places scaled down the country rock abruptly. For a distance of over 3000 feet this wall has been traced and extensive prospecting has exposed quite thoroughly a streak of carbonate ore which crops at frequent intervals for this distance. The surface showing varies from a few inches to a few feet and in one case twenty-five feet wide. Mr. James Harvey, manager of the Clark properties at Greenwater, has had these croppings thoroughly sampled and states that the average of all samples taken is better than 10 per cent. It is now his intention to push the two drifts vigorously, following the ore.

Major J. W. A. Off, of the Greenwater Furnace Creek Copper Company, returned from the property this week and states that the crosscut tunnel is now in 100 feet, and that the report of forty-five feet last week was in error. This crosscut is expected to reach the vein under a point where strong ore croppings have been exposed by erosion. As these croppings form the crest of a hill, it is believed by engineers that a fault of some importance has occurred. On other parts of the property the iron cap, though seamed with copper carbonates, is continuous.

Major Off states that judging from surveys and such exposures along the



ORE ZONE OF THE KEMPLAND AND CLARKE COPPER PROPERTIES



ORE CROPPING ON GREENWATER FURNACE CREEK COPPER COMPANY'S PROPERTY

DEC. 29, 06  
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DEC 29 1906

DEC 29

DEC 29

DEC 29

## THE GOLD BEND DISTRICT

**New Field in Eastern San Bernardino County Proving Rich. High Grade Ore in California Hills Property. The New Town of Gold Bend**

**D**EVELOPMENT OF THE Gold Dollar vein by the California Hills Company has recently shown very high gold values and has greatly stimulated activity in the Goldbend district of eastern San Bernardino county, California. This now promises to become an important mining region.

The California Hills shaft is 60 feet deep and still in ore, though the rich shoot is raking south and has all but passed out of the shaft. It is learned from Mr. H. E. Woods that a drift will be started on this ore body to determine its length and that considerable crosscutting will be done—after which the present shaft will be continued down, or another started if developments should indicate a more suitable location. The Gold Dollar vein is from eighteen to twenty-four inches wide at the surface, carrying from \$60 to \$70 a ton. At forty feet depth it had widened to thirty inches with from \$90 to \$100 a ton gold value. At the bottom the vein is as wide and horns free gold in payable quantity, but the shaft has passed through the bonanza shoot. A large amount of shipping ore is now sacked and awaiting transport.

A new discovery has been made on California Hills ground 300 feet from the Gold Dollar. In a three-foot porphyry dyke has been opened something over a foot of quartz, which samples about \$16 gold and silver. A prospect shaft is to be started at once. On the Nighthawk claim, the south extension of the Gold Dollar, the owners are now sacking \$40 ore at a depth of seventeen feet.

The district is sixteen miles south of Homer on the main line of the Santa Fe, and water is plentiful. The country rock is granite, traversed by strong east-west porphyry dykes and with many veins which have a general northeast-southwest strike and a southeast dip of about 45 degrees. So far as developed, these veins appear

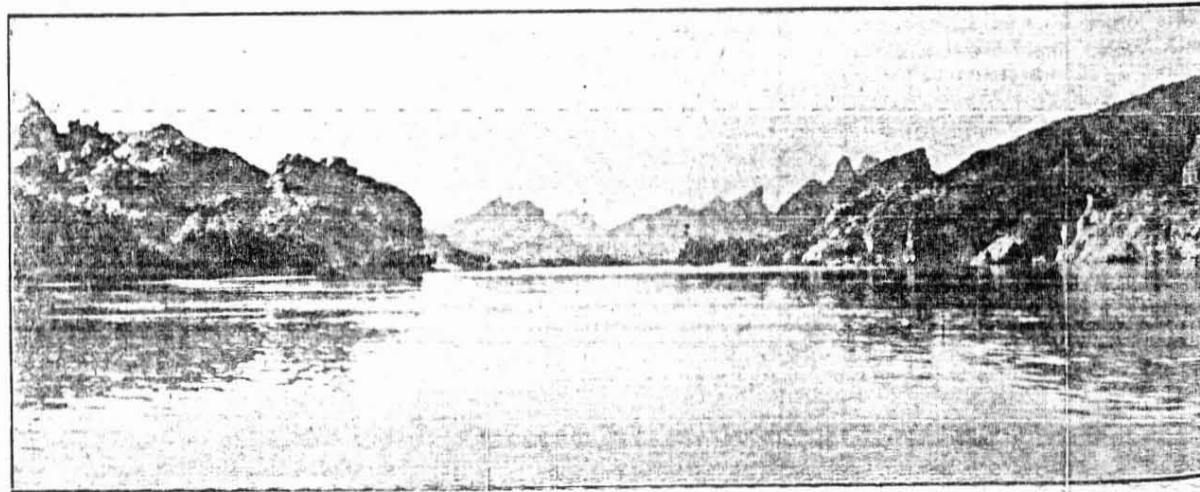
to be strong with well defined walls and the earmarks of permanency. They are sometimes isolated, but more frequently occur in groups of parallel fissures. One property, near the Gold Dollar, has eight distinct quartz ledges ranging from a foot to two feet wide and cropping close together within a zone of mineralized porphyry. Though the geology of this district has as yet not been closely examined, successful mining men are much impressed with its possibilities and are investing money. It is thought that it may very probably become a leasing district.

Mr. H. E. Woods and some other of the California Hills people have formed the Goldbend Townsite company, which has laid out a new town to be called Goldbend in the heart of the district. The California Hills Company will at once begin construction of buildings including a boarding house and office. A deep well for town water supply will be started. In the meantime water will be hauled from the Van Slyke shaft two miles distant and, if need be, from a coun-

ty well nearby in which there is an unfailing supply. Survey of the townsite was completed last week.

Prospectors and mining men are going rapidly into the district and signal success seems to have been met with by some of them. A very genuine excitement, caused by high-grade shipping ores near the surface, is

probable. The wagon haul is not long and rail charges to the Needles smelter are reasonable. This district is in the mineral belt which borders the west bank of the Colorado River from the Black Canyon, above El Dorado, to the region of Monument Peak where copper and gold discoveries of much promise have been made of late.



THE COLORADO RIVER NEAR MONUMENT PEAK

DEC 29 1906

**Los Angeles Mining Review**